

*Vitaly Shevoroshkin*  
(ed.)

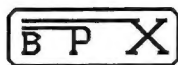
# Explorations in Language Macrofamilies



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## EXPLORATIONS IN LANGUAGE MACROFAMILIES



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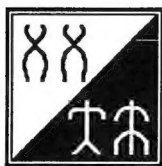
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Materials from the first International Interdisciplinary  
Symposium on Language and Prehistory  
Ann Arbor, 8-12 November, 1988

edited

by

Vitaly Shevoroshkin



BPX 23

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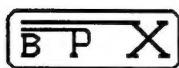
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## BOCHUM PUBLICATIONS IN EVOLUTIONARY CULTURAL SEMIOTICS

### EDITORIAL

BPX is a series of monographs or collections of papers (also resulting from pertinent colloquia) that are published at irregular intervals. The series is designed to bring into focus the interaction of nature and culture. Particular emphasis will be given to the overall ideas of **integration** and **focus**. Communicative processes will be considered to be integrated parts of cosmogenesis, biogenesis, psychogenesis etc. The fundamental processes underlying all levels of evolution are assumed to be identical. Not unlike most other sciences, **evolutionary semiotics** is considered to share in an ultimately unitary and indivisible reality. Its specificity is derived solely from its focus on a particular level of evolution: although seemingly obvious, the exact nature of this inevitable bias (human or proto-human predicament) continues to deserve concentrated attention. The prototypical structure for this is considered to be **culture**: a phenomenon whose true integrative potentialities have not yet been fully discovered or explored. For a semiotics thus conceived, structure and process are not different phases of reality and/or sciences but rather mere faces of a unitary field. In the view of this series, then, any fruitful attempt at semiotic analysis will be based on premises of macro-integration - or **evolution** - and of micro-integration - or **culture**.

While it is the ambitious goal of this series to encourage interdisciplinary work on the nature of culture as outlined above, BPX will have to be content - especially in its initial stages - with more modest attempts at elucidating semiogenesis. In addition, most contributions will presumably be relatively specific, covering all possible areas of culture or proto-culture, with the desired unity or homogeneity - regarding aim and scope - largely confined to the background.

Bochum, December 1984

W. A. K.





## ACKNOWLEDGEMENTS

I would like to thank the people and institutions who made this second collection of materials from our 1988 Ann Arbor *Symposium on Language and Prehistory* possible. Its preparation was funded by discretionary grants from the following branches of the University of Michigan, Ann Arbor: the Office of the Vice-President for Research; the Office of the Associate Dean for Research (College of Literature, Science, and the Arts); the Rackham School of Graduate Studies; and the Center for Russian and East European Studies. Grants were also given by the Northcote Parkinson Fund (President John Train), the University of Tennessee at Chattanooga, and Dr. Ralph Baldwin.

I am very grateful to Alex Eulenberg for proof-reading, re-typing, and re-formatting the various manuscripts and typescripts, and also for reworking my colleagues' sometimes enigmatic Slavicisms into a more understandable English. I also thank Jim Parkinson for his meticulous work in editing the Nostratic word list. Credit is also due to Joseph Shallert for translating the text and tables of V. Dybo's article 'V. M. Illich-Svitych and the Development of Uralic and Dravidian Linguistics', as well as preparing them for photo-offset reproduction; and to Larry Bogoslaw, for preliminary work on transcribing Dybo's comparative phonetic tables.

This volume could not have been compiled without them.

—V. S., Ann Arbor, July, 1989



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## INTRODUCTORY REMARKS

Vitaly Shevoroshkin

I am writing this after having attended the second (1989) Moscow Conference on *Linguistic Reconstruction and Prehistory of the East*. Both there and at the first conference (1984) scholars discussed not only linguistic problems of deep and not-so-deep reconstructions and comparisons of languages but also the possible location of homelands of the peoples who spoke the reconstructed languages, chronology, and so on. In the area of historical linguistics, remarkable progress was achieved during the five-year period between the Moscow conferences: whereas in 1984 reconstructions of proto-languages — ancestors of linguistic phyla (Nostratic, Sino-Caucasian) were topics of discussion, in 1989 several SYSTEMATIC COMPARISONS BETWEEN THESE PROTO-LANGUAGES were considered: namely comparisons between Nostratic, Sino-Caucasian, Austric, and Amerind — the latter represented by a few archaic daughter languages.

Actually, the first such systematic comparison, that of Nostratic and Sino-Caucasian, had already been presented at our Ann Arbor Symposium on Language and Prehistory (Nov. 1988), in Starostin's paper 'Nostratic and Sino-Caucasian'. Since this paper is exceedingly important for the progress of deep reconstruction, we have included the full — not preliminary — report in the present volume. This report was also repeated, with some minor changes and corrections, at the Moscow 1989 conference; we included these alterations (along with still more corrections) in the present edition.

In spite of of recent (and not-so-recent) advances in the Soviet Union in the field of historical linguistics, the majority of Western scholars are antagonistic towards any kind of deep comparisons and reconstruction. This largely stems from ignorance, as they know only of the long-range comparisons and reconstructions made in the U.S. in the 50's and 60's — all of which soundly failed. These scholars are often completely unaware of Illich-Svitych's successful reconstruction of the Nostratic proto-language — made a quarter century ago — let alone reconstructions of daughter languages of Sino-Caucasian

(North Caucasian, Yeniseian, Sino-Tibetan, etc.) made or re-made recently by Soviet scholars.

This attitude is very damaging to the spread of knowledge among the new generation of talented youth, since linguists of the orthodox 'establishment' serve on the commissions at foundations and universities, effectively blocking any attempt to obtain a substantial grant for research or for translation of Russian works in deep reconstruction of languages. All this despite the fact that Amerindian historical linguistics lacks a workable long-range methodology, and scores of American Indian proto-languages still lack reconstructions.

Of course, not all Western linguists are that ignorant. I do not want to quote here the high evaluations of Nostratic reconstructions by Western experts (B. Collinder, N. Poppe, K. Menges, P. Garde, R. Anttila, H. Birnbaum et al.): they were published long ago. But I would like to mention here the Sinologist William Baxter III from the University of Michigan. He wrote a preface to his translation of Starostin's comparison of Sino-Caucasian daughter-languages (North Caucasian, Yeniseian, and Sino-Tibetan) which appeared in the materials of the Moscow 1984 conference. In this preface he gave Starostin's work a high mark — as the first work of its kind which is methodologically sound, being based on phonetic, morphological, and semantic correspondences between the daughter languages.

Starostin's comparison of NOSTRATIC and SINO-CAUCASIAN contains over 230 sets; it is also based on phonetic correspondences between Nostratic and Sino-Caucasian reconstructed roots. Starostin proposes some slight changes in the interpretation of Nostratic phonetics that may or may not be valid (to me it seems premature to change Nostr. q' and q to k' and x [= x]).

At the 1989 conference in Moscow, I. Peiros systematically compared these Nostratic-Sino-Caucasian sets with Austric (or to be exact, with reconstructed Austronesian and Mon-Khmer roots), and

the results are encouraging; they support the thesis that all macrofamilies are genetically related.<sup>1</sup>

The first book of proceedings from the Ann Arbor conference<sup>2</sup> contains M. Ruhlen's comparison of Nostratic and Amerind. Unfortunately, Amerind is not yet reconstructed; roots cited by Ruhlen are not based on exact sound correspondences since there are only a few valid reconstructions of Amerind's daughter languages. Still, the results are interesting; Ruhlen's sets represent the most stable lexical and grammatical elements of both Nostratic and Amerind.

L. Campbell has also (unwittingly) discovered the correspondences, and has published them in a strongly negative review of J. Greenberg's treatise on American Indian language classification, *Language in the Americas*.<sup>3</sup> Campbell compares Greenberg's Amerind reconstructions (also used in Ruhlen's work) to Finnish – a Nostratic language – and finds many striking correspondences. Ironically, he chose Finnish not as a representative of Nostratic, but as an arbitrary 'unrelated' language, in order to play down the resemblances that form the basis for Greenberg's Amerind hypothesis: 'Such resemblances should fare better than equations with some unrelated language selected at random. I have compared G[reenberg]'s grammatical evidence with Finnish data and have found that Finnish grammatical forms fit most of G's forms; this makes it difficult to accept the G grammatical data as convincing evidence.' (602) We note just a few of the examples he gives (numbers in the leftmost column are those of Greenberg's Amerind sets)<sup>4</sup>:

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<sup>1</sup>See also my 'Methods in Interphyletic Comparisons', *Ural-Altaische Jahrbücher* (1989): 1-29.

<sup>2</sup>V. Shevoroshkin, ed., *Reconstructing Languages and Cultures: Abstracts and Materials from the First International Interdisciplinary Symposium on Language and Prehistory, Ann Arbor, 8-12 November, 1988*, Bochum Publications in Evolutionary Cultural Semiotics 20 (Bochum: Studienverlag Dr. Norbert Brockmeyer, 1989). Henceforth, *RLC*.

<sup>3</sup>*Language* 64 (1988): 591-615.

<sup>4</sup>Campbell also finds similarities between full-meaning words, but unlike the grammatical correspondences he finds, this list is mostly spurious. (607-08)



	AMERIND	FINNISH
3	m '1p' (Chibchan-Paezan; Penutian ~ mainly pl.)	m- 'we', minä (minä) 'I'
11	s '2p'	-si 'your (sg.)', sä 'you (sg.)'
13	t 'Dem., 3p pron.'	tä- this
14	m "	tä-mä 'this', nä-mä 'these'
15	n "	ne 'they, these', nä- 'these'
19	k '1p dual'	Finno-Ugric *-k 'dual', Finn. me-k 'we', cf. kaKte- 'two'
23	ni 'this', nī 'hither', eni 'this' [cf. 15 -V.S.]	nä- 'these (here)', ne 'there'

Campbell's argument, of course, makes sense only as long as, as he asserts, Finnish 'is not seriously taken by anyone of reason to be closely related to any American Indian language.' (606) 'Reasonable' as it is, the assumption that the languages cannot be related must be rejected: It would defy the laws of probability for two dozen such identities to be unmotivated. And since grammatical elements are almost never borrowed, the obvious conclusion is that we are dealing with a genetic relationship, one between Amerind and Nostratic; as it happens, the Finnish forms given are identical with not only Uralic (a Nostratic daughter-language), but also Nostratic itself<sup>5</sup>. But for Campbell, with no knowledge of Collinder's Uralic reconstructions or Illich-Svitych's Nostratic reconstructions, such a relationship is inconceivable. With a correct understanding of macrofamilies and the principle of external comparison, however, Finnish may indeed be 'seriously taken' to be related to MANY American Indian languages, and its exact correspondence with the reconstructed grammatical forms of Amerind only SUPPORTS the Amerind hypothesis!

As for comparisons of full-meaning roots of Amerind with those of Nostratic (or Sino-Caucasian, or Austric, for that matter), the situation is more complex: any language contains much more full-

<sup>5</sup>See M. Ruhlen, 'Nostratic-Amerind Cognates' in *RLC*, 78-83; for Nostratic grammatical elements (taken from Illich-Svitych's *Dictionary*), see this vol., 131-61, nos. 45, 59, 65, 111, 121, 122, 128, 129, 134, 142, 149, 150-53, etc.

meaning words than grammatical roots; this increases the possibility of a chance resemblance. I propose, therefore, to compare, first of all, archaic Amerind languages such as Salishan or Penutian; they have conserved complex phonetic systems, which include uvular and laryngeal fricatives, lateral obstruents, as well as oppositions of the type (velar : uvular), (plain : glottalized), etc. What is more, the roots of modern Salishan languages resemble those of Proto-Salish closely or exactly. Here are a few tables comparing Salish languages and Nostratic<sup>6</sup>, arranged by the Salish roots in this order of phonemes: q' q'w q qw k' (incl. č' < \*k') k'w k (incl. č < \*k) kw t' t p' p λ' ʔ l m n c' c s h.

	SECHELT <sup>7</sup>	NOSTRATIC
1	q'wəɭ-ána 'ear' (Salish *q'wəɭ-)	**q'/iw/1ʌ 'to hear' [M 366-1] (Dolgopolsky: q'/ew/1ʌ)
2	qəp 'touch with hands'	**qəpʌ 'seize' [M 371-2]
3	Root k'əɭ- 'small' in s-k'əɭ-íq-w-úya 'little finger'	**k'Ut'ʌ 'small' [#205]
4	s-č'ənu 'dog' (č' < *k') (cf. Ruhlen #35) <sup>8</sup>	**k'Üjnʌ 'wolf, dog' [#238 K'- indicates (k' or q'), but cf. Kartv. *-k'na 'dog']
5	k'wín 'how many?' (cf. Ruhlen #7)	**K'o 'who?' [#223]. **K'əj - **K'a(w), according to Starostin's manuscript on Altaic. (Turkic *ki/e-m, Mongol *ke-n 'who', Tungus *xōni 'how?')
6	t'ip- 'to roast' (Cf. Penut.:	**t'əpʌ 'warmth, heat' (after

<sup>6</sup>Cited mostly after J. Parkinson's list (this volume, 131-61): "#" refers to the entry number in Illich-Svitych's dictionary; "M" to his paper in *Etimolgiia* 1965.

<sup>7</sup>Forms are cited mostly after J. Timmers, *A Classified English-Sechelt Word-List* (Lisse: Peter de Ridder Press, 1977).

<sup>8</sup>Cited after RLC, 78-83.

	Wintu t'ipe: 'burn emitting sparks')	Starostin #186; cf. M 338-2)
7	Moses t'uxw-u'xw 'die, dead' (cf. Salish *t'ixw-'kill')	**dΛwΛ 'be sick, die' [#76]; the stem may be more complex: IE *dwe: H- ~ AA *dwj / *dwɣ
8	-p'it- 'flat, broad'	**p'iHΛ- 'broad and flat' [after Dolgopolsky; cf. M 372-16]
9	pákω-pakω 'liver' (root pákω)	Nostr.: Alt. *pāk' 'liver' (Starostin); (Alt. *k' < **k' / **q')
10	λ'ut 'child'	**ē'[u][ʔΛ]íΛ 'little, small' (Dolg.); ē' = λ'
11	t'ix- 'skinny' etc.	**LΛ[x]Λ 'be ill' (as in Kartv. *lex-) [cf. #272]
12	s-t'iqw 'flesh, meat'	**LΛgwΛ 'meat' (L = l, í, or t) as in Kartv. *layw-, Svan. leyw- 'meat'; Also in Afro-Asiatic: West Chadic *lahwΛ
13	t'éq'w 'bow'	**tonk'/q'a 'to bend' (*-n- is missing in Salish also in #18, #20)
14	tup'-íws- 'to skin (animals)'; t'up'-uw 'peel off' (= 'heal, as wound')	**Lop'Λ 'peel, peeled bark' [cf. #268 and Starostin #113]; L- = λ' ? (W. Chad. ē'ΛpΛ 'bark, rind, peel')
15	t'it 'sprinkle' (< Salishan *t'í, after Kuipers); cf. Penutian: Wintu t'it-d-, t'e:q- id.	**L/ə/jΛ 'water, pour/flow' (j=y) [#267] (*L/ə/jxΛ, after Dolg.); L = l or t
16	ləw 'rib'	**luwΛ 'bone' as in Uralic *luwe id.
17	may 'worn out'	*maHjΛ 'lose strength, weaken, perish' [#356]
18	c'it 'stab, dig'; root ci(i)q	**č'in[g]Λ 'stick into' [cf. M 335]; č = č or č'.

19	háý- 'chase, pursue', háý?- 'hunt'	**Haja 'chase, pursue' ('hunt' in Alt. *aja-) [#103]; H- may be h-
20	háq-t 'breathe', haq <sup>w</sup> -n-áx <sup>w</sup> 'to smell'	**ʔanqʌ 'breathe' [#125] (note ʔ-, not ʔ-, in Egyptian ʕnh)

	MOSES COLUMBIAN <sup>9</sup>	NOSTRATIC
21	k'it' 'break (string)', Se- chelt ǎt 'cut'	**k'o/t'/ʌ 'cut' [M 360]; note that Kartv. *k'wet- shows *-t-, not *-t'-.
22	kam- 'carry, take' (root *kámʔ ?)	**kamu 'seize' [#157]
23	(k)ʔiʔx 'slide, slip'	**gi[ʔ]hu 'smooth' [#84]
24	kwaʔ 'and'	Afro-Asiatic *kw conjoining particle, Kartv. *kwe intensifying particle, etc. [see #201]
25	tq'áw-s 'two'	Kartv. *t'q'u-b 'twins' (but **tuʔʌ 'two' in Nostr. which is compared by Starostin [#180] with Sino-Cauc. *t'q'wE).
26	p'íʔq 'ripe' (cf. Kalispel p'iyʔáq 'ripe')	**p'uHjʌ 'to boil' (as in IE *speHj- 'to ripen', Uralic *püjʌ- 'boil, ripen') [M 343-15]
27	p'ik' 'bright, shiny, sparkle'; identical with 44	Afro-Asiatic : Berber *PK 'sun, light' (Nostr. **p'ák'[U] 'hot')
28	ptíxw-am 'spit' (Sechelt páxwt, Cœr d'Alène tapaxw; cf. Penuti: Maidu t'ûp' id.)	IE *pt̥jeu- 'spit' (descriptive); see s.v. Nostr. **t'upʌ 'spit' [M 354-12]
29	ʌ'aʔ-ʌ'aʔán' 'look for'	**êʌʔŋʌ 'recognize' (Dolg.); ê = ʌ
30	ʔáq-əlx 'sit' (sing.); cf.	**Lʌga as in Kartv. *l(a)g-, IE

<sup>9</sup>Cited after D. Kinkade, *Dictionary of the Moses-Columbia Language* (Nespelem: Colville Confederated Tribes, 1981).

	ʔáqʷ 'put away' ?	*legh- 'put, lie (down)' [#328]
31	ʔáʔt 'wet'	**L/a/t'ʌ 'wet, moist' [#265]
32	ʔápɣʷ 'burn, scorch'	AA *ʂʌb, *ʂhb 'heat' and / or IE *lap- (Anat. and Latw. lap-) 'smolder'
33	lám-kʷ 'break off' (cf. Squamish ʔm-čʷ- 'chip off'; Penutian:Wintu ʔe/ʔm- 'demolish')	**ʔamʌ 'fragile', as in IE *lem- 'break; weak', Uralic *ʔamʌ 'crash; weak'. [M 371-11; cf. #254]

SQUAMISH <sup>10</sup>		NOSTRATIC
34	q'a/aʔ 'be high up' (-l in Cowichan); root *q'aʔ	**q'aLi or **k'aLi 'arise, top' [#210]
35	q'ap' 'seize'	*q'áp'ʷ or **k'áp'ʷ 'paw' [#222]
36	q'wuj 'die, be paralyzed', q'wuj-ɬnaxʷ 'be killed'; root *q'wujʔ or *q'wujʔ	**q'o(H)lʌ 'kill, die', as in Kartv. *q'wɪl- 'kill', Drav. *kol- 'kill', Ural. *kōle 'die' [M 370-5]
37	qʷatqʷ-anʔ 'pass, go by'	(?) *q/o/dʌ 'move' [M 338-12]
38	k'wəč 'look, catch sight of' (Shuswap wik-m 'see', with w- from *k'w)	**Koki 'to track, watch' as in Ural. *koke 'search, find', Alt.: Turkic *Kogʌ- 'track, chase' [#183]
39	k'wəʔ-əwʔ 'skin'	**kolʷ/ʃʌ, after Dolgopolsky; Starostin [# 54] compares Sino- Caucas. *q'wʌlʌ 'bark, skin'
40	tiqʷ 'muddy'	**diqʌ or **tiqʌ 'soil' (=Kartv.) [cf. # 69]
41	takʷ 'tight' (about clothes, etc.)	**ta/k'ʌ 'suitable' [M 335-7]; *k' may be from **kʷ (cf. #9)
42	n-təʔ-čis 'stone hammer' (cf. Penut.: Wintu -thaʔ-)	**te/í/ʌ 'split' [M 360-5]

<sup>10</sup>Cited after A. Kuipers, *The Squamish Language*, (The Hague: Mouton, 1967).

	'break')	
43	təh-m 'leak' (cf. N. Wakash.: Kwakiutl th-m 'drip')	***tΛ[h]Λ 'pour, flow' [M 347-9]
44	p'ač' 'hot' (root *p'ak' / *p'ik')	***p'äk'u 'hot' [cf. M 337-16]
45	λ'iʔ-s 'like, love, want' λ'iʔ 'dear', etc. (root *λ'ayʔ) (cf. Penut.: Klamath ʔoyʔ 'be sweet')	***ê/o/hɪ, ***ê/o/hjΛ or ***ê/o/hɪ, ***ê/o/hjΛ 'wish' as in Sem. *êhy/w (Dolg.); ê=[λ], ê=[ʔ]
46	ʔič' 'be cut'	***êäk'a 'split, cut asunder' (Dolg.)
47	ʔik'w 'get hooked (up)'	***ʔük'Λ 'pierce, shove into' [#261]
48	ʔaq'w 'come off (bark)'	IE *leuk- (infixed *leu-n-k-, as in Lith. lùnkas, Slavic *lyko 'peeled bark' etc.); IE *l < Nostr. ***l, ***ʔ or ***í; *k < ***q' or ***k'.
49	s-ʔámʔʔm 'dew', ʔámʔx'w 'to rain'	***LaHm/u/ 'marsh, silt, wet' as in Kartv. *lām- or *lam- 'silt, dampness', etc. [# 263]; Starostin (# 106) compares Sino-Caucas. *xwHemΛ 'wet, liquid'
50	s-mic 'meet' (see Ruhlen #21)	***Ho-mśa (< ***ʔo-mΛCa ?) 'meet' [cf. *114]; see next
51	s-cá-ciʔn, cay 'blood', ciʔw 'bleed', ci/aq'w 'red, bleed' (Moses cax 'red'; Shuswap cay'w 'bleed'); cf. Penutian: Klamath čeqle 'blood', Chinook čxi 'bleed', Kalapuyan ca:l, ci:li-lu: 'red'	Kartv. *śi-sx-]- 'blood' (reduplication, according to Illich- Svitych) < ***sΛxΛ, ***ʔΛ-sxΛ 'blood'. Cf. Starostin (#169); he compares Alt. *sagΛ 'blood, health'. Note prefix ***ʔΛ- in Nostr. (cf. Hittite ešhar 'blood').
52	sax'waʔ 'urine'	***siqΛ (or ***sixu) 'urinate', as in IE: Hittite sehur 'urine' (< sehu-r, as pahhu-r 'fire' ?), AA:

	Arab. $\sqrt{\text{šbh}}$ 'urinate', Alt. sigä-id. [cf. <i>Ėtimologija</i> 1966, p. 402]
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	SHUSWAP <sup>11</sup>	NOSTRATIC
53	kʷl- 'bake', c-kʷel 'warmed up'; cf. Coer d'Alène kʷal' 'be hot, sunny, warm'	IE: Greek kʰolē 'burn (v.t.)' etc. (Nostr. *g-), or IE *geu1- 'live coals' (Nostr. *k-).
54	t'ik 'fire' (cf. Coer d'Alène t'ək 'brand')	Ural. *tā[γ]u- 'fire' (cf. Alt. *t'/o/ga id.) [see M 337-12 and Starostin #190]
55	tuy-lx 'stoop, bend over', s-tuy 'bent over' (in some Salish languages: tuy 'stoop')	**tojΛ 'tilt, incline; bend', as in Ural. *tajΛ- / *toja- id., Alt. *tajā- 'tilt, incline; lean against' [M 350-6]
56	p'ixw 'roast'	**p'ixwΛ 'fire' [M 352-5]
57	cu-ʔ 'to point' (root *cəw / *cú- or *cu1- 'point; show; order', etc.)	**cūHΛ 'look' [#43], **cūΛΛ 'guard' [M 367-12]

This list can easily be extended.<sup>12</sup> Validation for many of the comparisons above can be found in other American Indian languages.

<sup>11</sup>From A. Kuipers, 'Towards a Salish Etymological Dictionary II', *The Working Papers of the XVI Salish Conference*, University of Montana (1981) 165.

<sup>12</sup>Cf. Moses n-t'əl'-ána? 'wolf': Alt. \*t'ulke 'wolf, fox' (Starostin; cf. M 372-11); Pudget t'i-tele? 'young animal': N[ostratic] \*\*t'āHL[ɪ] id. (Dolg.); Salish \*k'wiy? 'quiet' (Cf. also Coos k'əi 'be quiet'): N \*\*K'oj (H)Λ 'lie, rest' [cf. #233], \*\*ʔal 'be alive': \*\*ʔelΛ 'live' [#131], etc. Cf. also comparisons between Squamish and IE made by Kuipers (appendix to his book). Not all of them are valid; here are some of the sounder ones: Sq təhʔ, təʔ 'undergo, be made, be located': IE \*dhē- 'put'; also 'make' (< N \*\*disu 'put', [cf. #75 and M 344-3]); Sq s-wíʔqa 'man', s-wí-wʔlus 'young man': Lith. vėgras 'man' etc. (< IE \*wiHro < N \*\*wiHrΛ 'male' [cf. M 362-12]);

For instance, if we add to Salishan \*p'ixw- 'burn' or the like (see set 56 above) Penutian, Hokan, Algonquian and Central Amerind data we can reconstruct the root even more precisely: \*p'ixwe or \*p'ixwe 'fire, heat, hot; burn'. Indeed, the reconstruction of the final \*-e is supported by Hokan: Jicaque pwe 'burn', Algonquian \*-a-pwe- 'roast, fry', Central Amerind: Kiowe phix 'fire' (cf. also Equatorial: Arawak pawa-ta 'make fire'); Penutian confirms the presence of an inlating h-type fricative: Takelma p'ih 'fire', Proto-Maidu \*p'ih- 'fire', etc.

Now as for Nostratic, a root \*\*piγwe, with \*\*-e, is possible to reconstruct as well, since Uralic (the most archaic Nostratic language as far as vowels are concerned) has \*pīwe 'fire'. In Amerind, the meaning of 'shine, bright' is present as well (cf. Salish: Kalispel p'exw 'bright, shine'). Nostratic has preserved this meaning in Altaic: Proto-Japanese \*pə-i 'fire' and \*pī 'sun'. And we can go further, comparing (with both Nostratic and Amerind) the Sino-Tibetan \*pwaŋ 'fire'.<sup>13</sup> Here we seem to have an archaic suffix \*-r present also in Nostratic: cf. Altaic \*p'ö-r 'fire', comparable with IE \*pexw-r as in Hittite pabbur 'fire' (Starostin); both from Nostratic \*\*p'iywe-r, or the like.

Looking through the above sets we can easily identify glottalized consonants in Salish (q'/q'w, k'/k'w/č', t', p') with matching consonants in Nostratic (i.e. q', k', t', p'), and, accordingly, Salish q/qw, k/kw/č, t, p — with Nostratic q, k, t, p (as well as g, g, d, b); this confirms, indirectly, Illich-Svitych's reconstructions of Nostratic. Salish ʔ (phonetically, a fricative [ʔ] or an affricate [tʃ]) matches three DIFFERENT Nostratic sounds, ʔ, ʔ and ʔ. Salish vowels mostly correspond to Nostratic vowels: {a : a}; {i : i or ä}; {a/i : ä}; {u : u/ü or o}; {ə : u or o} more seldom {ə : a). It seems that some initial sequences of the type \*\*ʔA- (\*\*HA-)

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Sq sinλ' 'senior-line children, elder siblings': IE \*sen- 'aged' (also 'year': cf. M 337-5); Sq iəm? 'gird, girth': IE \*iem- 'tie together' (< Nostr. \*\*ñamΛ 'squeeze, seize' [#319]), etc.; Kuipers also compares grammatical elements.

<sup>13</sup>See Bengtson's 2nd example in RLC, 32.



represent fossilized prefixes in Nostratic: this is clear also from Starostin's Nostratic-Sino-Caucasian comparisons<sup>14</sup>

This is just one of very many examples where we can find exact sound correspondences between different phyla — including those of which the ancestral proto-languages are not yet reconstructed. I think that most of such correspondences will hold: the exact phonetic and semantic matches between Salish and Nostratic are remarkable.

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The present volume contains two sections of presentations from participants of the 1988 Ann Arbor Symposium; one dealing with the macrofamily (phylum) of NOSTRATIC LANGUAGES, and the other dealing with INTERPHYLETIC COMPARISONS. A section on RECONSTRUCTIONS follows, which includes Chukchi-Kamchatkan ('Kamchukchee') roots reconstructed by O. Mudrak plus highlights from the *Nostratic Dictionary* — Illich-Svitych's introduction, tables of phonetic correspondences, three unabridged entries, and a list of Nostratic roots reconstructed by Illich-Svitych (this list, edited by J. Parkinson, is prefaced by a list of corrections to M. Kaiser's 'V. M. Illic̆-Svityč's early reconstructions of Nostratic')<sup>15</sup>. Following this introduction is a photo section, which includes a picture of Illich-Svitych and his closest friends, Dybo and Bulatova, who have been carrying out the publication of Illich-Svitych's heritage (it is not yet fully published). Other photos are those of the participants of our 1988 symposium.

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<sup>14</sup>This vol., 54, nos. 37-42, etc.

<sup>15</sup>RLC, 131-74.



ABOVE: Vladimir Dybo, Vladislav Illich-Svitych, and Rimma Bulatova on the balcony of Bulatova's apartment in Moscow, 1960. BELOW: Carl Menges (Vienna) and Aron Dolgopolsky (Haifa) at the Ann Arbor Symposium, November 1988.



ABOVE: Viacheslav Ivanov and Sergei Starostin (Moscow). BELOW: Merrit Ruhlen (Palo Alto) — Ann Arbor, November 1988.



ABOVE: Gerard Diffloth (Ithaca) and Ilya Peiros (Moscow). BELOW: Vladimir Orël (Moscow). — Ann Arbor, November 1988.

# NOSTRATIC LANGUAGES

V.M. ILLICH-SVITYCH AND THE DEVELOPMENT  
OF URALIC AND DRAVIDIAN LINGUISTICS  
(PRELIMINARY REPORT)

Vladimir Dybo

In the preface to his work "A Comparison of the Nostratic Languages", V. M. Illich-Svitych wrote: "In the more advanced areas of comparative linguistics...there has recently emerged a certain tendency to overestimate the possibilities of the method of internal reconstruction, whose application without the strict control of external comparison can lead to the construction of a multitude of equally probable and equally arbitrary proto-systems. Such a situation requires that we go beyond the limits of any single language family. Only external comparison guarantees the appropriate verification and enables us to select the single variant out of numerous possible historical reconstructions which most closely approaches reality. The very existence of 'Nostratic linguistics' can be justified by the fact that it not only utilizes the achievements of Indo-European, Uralic, Altaic, and other branches of comparative linguistics, but is itself intended to significantly further the development of these areas, just as, e.g., Indo-European aids in the development of Germanic, Slavic, and Iranian studies" (vol. 1, p. 2).

Such a definition of the problem follows naturally from not defining the primary goal of Nostratics to be the determination of a genetic relationship between the six major language families of the Old World. Basically, this fact was already demonstrated by V. M. Illich-Svitych in his earlier, preliminary publications: 1) "Towards a Comparative Dictionary of the Nostratic Languages"; 2) "Correspondences of Stops in Nostratic Languages"; 3) "The Origin of the Indo-European Guttural Series in the Light of External Comparative Data"; 4) "The Reconstruction of Uralic Vocalism in the Light of External Comparative Data".

What is important is that even these first works, which were devoted specifically to proving the remote genetic relationship of the families in question, inspired the author to embark on the study of the comparative historical grammars of these families. This was because Illich-Svitych did not consider the principal goal of the Nostratic theory to be merely proving the kinship of the major language families of the Old World. Instead he set himself the task of creating a comparative historical Nostratic linguistics, that is, a comparative historical phonology, morphology, and word-formation of the Nostratic languages. Proving the genetic relationship of these languages was seen by him as a by-product of solving the primary

task. It is only natural that the creation of Nostratic historical comparative linguistics required a painstaking examination of the data used for comparison, as well as a verification of the precision and reliability of the established reconstructions in each of the compared language families. Elsewhere I have pointed out that in the etymological tradition of each group of the related languages there exists a tendency to convert the corpus of proposed etymological solutions into a closed system, by means of which it is supposedly possible to solve all etymological problems arising in the course of analyzing the languages of the given group. Such an approach is completely appropriate and to reject it would be tantamount to rejecting one of the basic principles of etymological studies. However, in the absence of the strict control provided by external comparison this approach can lead to a situation in which, in those areas of comparative linguistics with highly developed etymological studies, the corpus of etymological propositions appears to be overloaded with versions characterized by exceedingly insignificant differences in probability. A characteristic example is that of Indo-European etymological studies, in which we find a large and ever-growing number of such etymologies. This is particularly true of the basic corpus of root etymologies with dubious derivational, grammatical and semantic motivation. Thus, for example, if one wished to utilize Indo-European material for Nostratic comparison, Pokorny's dictionary would be quite insufficient for the purpose, since one would have to subject each entry to careful scrutiny and etymological revision. As one uses Illich-Svitych's "Opyt...", one becomes convinced that just such a review was carried out by the author. On the basis of my own experience I can confirm that this revision was every bit as necessary for Indo-European as it was for any other of the Nostratic daughter families.

As if seeking to avoid the mistakes and extreme positions of their Indo-Europeanist colleagues, Uralic etymologists as a rule have shunned root etymologies and semantically suspicious comparisons. When such comparisons occur in the course of comparative Uralic research, they are usually excluded from "respectable" etymological collections. Due to this strictness, precision, and moderation, Uralic etymological studies compare favorably with Indo-European. However, this moderation and precision have not protected Uralic linguistics from the other extremity. Since the end of the "Golden Age" of Uralic studies, there has been a tendency to "simplify" the overall picture in Uralic reconstruction by excluding from it those elements which are insufficiently motivated by the existing corpus and which don't fit well into the accepted structural schemata, in part without any further careful comparative investigation. In Uralic etymological studies this trend is accompanied by an extreme

tendency to identify the etymological picture with the picture produced by reconstruction. Most often this finds expression in the rejection of parallels only because of their non-correspondence in some detail of the reflexes expected by comparative phonology, although the phonological reconstruction of Uralic is itself still far from complete. A rich collection of such comparative phonological "purisms" can be found in Károly Rédei's new Uralic etymological dictionary where, for example, parallels are rejected because of a lack of correspondence in vowel series.

Thanks to his considerable experience in comparative and etymological research within the fields of Slavic and Indo-European, Illich-Svitych was able as early as the 1960's to grasp rapidly both the strong and weak aspects of the Uralic comparative tradition and to determine exactly the level of precision which the strictly comparative procedure had attained. As the basis for the Nostratic comparison he chose the classical Finno-Ugric reconstruction of Settel and his school in its full scope. This choice attests to Illich-Svitych's profound understanding of the strategies of comparative historical research, since however attractive the given reconstructions may be in terms of structure, phonology, and typology, the practicing comparativist above all requires a maximally articulated inventory of reflexes, precisely such as that provided by the classical Finno-Ugric reconstruction.

One should not conclude, however, that Illich-Svitych's adoption of the "classical" reconstruction was motivated exclusively by "strategic" considerations. I will cite an example. Following Toivanen, Illich-Svitych examined the reflexes of affricates in Saami, choosing the variant with three series of medial affricates. In the rough draft of his comparative Nostratic phonology he writes: 'In Saami the existence of sibilants as the third reflex of affricates in the given position renders probable the hypothesis that here the original opposition was ternary, and hence analogical to the similar opposition in stops (geminate, simple affricates, and spirantized affricates \*č<sub>1</sub> and \*č<sub>2</sub>)'. And further: 'The reconstruction for Uralic of a ternary opposition of affricates defined in terms of the nature of closure in intervocalic position (as suggested by Saami) appears to be confirmed by certain comparisons.'

Subsequently this reconstruction was confirmed by external data (see Table 1, next page).

Thus, in all cases where Illich-Svitych adopted those subtleties of classical Uralic reconstruction which distinguish the latter from modern conceptions, this occurred because modern Uralic studies lacked a convincing comparativist justification for rejecting the results obtained by classical methods. Of course, Illich-Svitych's solutions are not decisive in all such cases. The problems of affricates, laterals, and intervocalic stops remain extremely complex,



and their solution also depends on the state of reconstruction of the compared proto-languages. However, this means that in Uralic the given problem can not be deemed solved and that there remain possible solutions which are alternatives to the currently popular "simplified" Uralic reconstruction.

Table 1		Uralic affricates and their correspondences			
glottalic affricates		Ural.	<i>kićća</i> 'small'	Kartv.	<i>kuć</i>
			<i>koććŵ</i> 'basket'	Ham.-Sem.	<i>ḵ(w)ṣ</i>
plain affricates		Ural.	<i>rućŵ</i> 'to press, to destroy'	Ham.-Sem.	<i>rs</i>
voiced affricates		Ural.	<i>poć₁ka</i> 'flank'	Ham.-Sem.	<i>pḥḏ</i>
			<i>wić₁ŵ</i> 'to see'	Alt.	<i>üǰä-</i>

In my opinion, Illich-Svitych obtained his most interesting and promising results within Proto-Uralic in the reconstruction of the Uralic vowel system. His research in this area continued up to the time of his tragic death in August 1966. The results are scattered in various entries in the "Nostratic Dictionary" and are extremely laconic in nature. In his reanalysis of the Uralic data, Illich-Svitych brilliantly demonstrated the thesis which I introduced at the beginning of my paper.

In contradistinction to Uralic, in Dravidian studies Illich-Svitych's work dealt mainly with consonant systems. Most of his new ideas in this field concern the prehistory of the several Dravidian phonemes. Thus, he demonstrated that the two Dravidian trills (dental *r* and alveolar *ṛ*) are the result of a phonologization of initially allophonic variants conditioned by the character (series) of the final vowel of the relevant Nostratic stems:

#### Dravidian *r*

1. Drav. *\*par-* 'big' : Alt. *\*[bara]*, Ural. *\*para*
2. Drav. *\*kar(a)* 'thorn, blade' : Alt. *\*gara*, Ural. *\*kara*
3. Drav. *\*kor-* / *\*kur-* 'crane' : Alt. *\*[kara/kura]*
4. Drav. *\*kar(a)* 'bank, shore, edge' : Alt. *\*kira*
5. Drav. *\*ñarv* 'fire; to be in flames' : Alt. *\*[naha]* 'sun'
6. Drav. *\*kūr-* 'antelope, deer' : Alt. *\*[gūra]* 'male antelope'
7. Drav. *\*murv-* (variant *mūrṽ-*) 'to smash, to break' : Ural. *\*mura* / *\*mora* 'friable, fragile'
8. Drav. *\*ēr-* / *\*eri* 'to shine brightly, to flame' : Alt. *jaru-* 'to shine, to shine brightly'
9. Drav. *\*ūr-* 'to thaw, to melt' : Alt. *\*ūRu* 'to flow'

### Dravidian \*ɾ

1. Drav. \**ir(a)*-/\**er*- 'to break' : Ur. \**erā* 'to fall apart, part, portion'
2. Drav. \**ēr*- 'male' : Alt. \**ērā* 'male'
3. Drav. \**ēr*- 'to rise' : Alt. \**urā* (*ōra* ~ *or[a]*) 'to rise'
4. Drav. \**kar* (variants \**kār*/\**kār*) 'black' : Alt. \**Karā* 'black'
5. Drav. \**mār* (variant \**mār*) 'offspring' : Alt. \**[miarā-* 'marry']
6. Drav. \**mur*✓ 'to twist, to turn' (depalatized variant \**muri* -) :  
Alt. represented by Mong. \**muri*-, Tung. \**mōri*- 'to turn'
7. Drav. \**pe*✓- 'to pick, to collect' : Alt. \**bari*- 'to take in (one's)  
hand'
8. Drav. \**nerri* 'forehead, front side' : Ur. \**nēre*- 'front of head'

### Dravidian long vowels

Example: Drav. \**-īr*-/\**-īr*- 'to drag' : Alt \**ir'a*

("Opyt" contains seven examples of similar correspondences).

Ur. *ā* : Finno-Baltic *ā* ~ elsewhere \**ä* reflexes (*a/ā*-stems)

- A. 1. 'to ford' : Fin. *kaalaa*- ~ Lapp *galle*- (< \**gālā*-), Mord. \**kālā*-,  
Cher. *kel*-, Perm. \**kêl*-, Vogul \**kāl*, Ostj. *kül*-, S.Ostj. *kit*-,  
Kung. *kel*- (open [e]) 'to rise';
2. 'mountain, forest' : Fin. *vaara* ~ Lapp *varre*- (< \**wārā*), Vogul  
\**wār/wār* (< \**wāra*?);
3. 'hair, down' : Fin. *naava* ~ Lapp *njave*- (< \**ñāwā*-);
4. 'fork, branching' : Fin. *haara* ~ Lapp *sarre* (\**šārā*)
5. 'face' : Fin. *naama* ~ Lapp *namme* (< \**nāmā*)
6. 'custom' : Fin. *naala* ~ Lapp *nalle* (< \**nälä*)

Ur. *ē* : Finno-Baltic *ē* ~ elsewhere \**ä* reflexes

- B. 1. 'side, half' : Fin. *pieli* (< \**pēle*-) ~ Lapp *bælle*-, Mord. \**pālā*, Cher.  
*pel*, *pele*, Perm., *pól*, Vogul \**pāl*, Hung. *fél*, *fele*-.

### External comparisons

Ur. *ā*

1. Ur. *kālā* 'to walk' : Alt. [*kālū*] : Drav. *kāl*- (Opyt I, N 161)
2. Ur. *ñāwā* 'hair, down' : Drav. \**ñāv*- or \**nāv*- (Opyt II, N 322)
3. Ur. *wārā* 'mountain, forest' : Drav. \**vār* (Illich-Svitych notebooks)

Ur. *ē*

1. Ur. *kēle* 'tongue, language' : Alt. *k'ālā* (Opyt I, N 221)
2. Ur. *wēre* 'edge, shore' : Drav. *var*- 'side, edge' (DED 358; Illich-Svitych notebooks)

Another result of the successful application of external comparison was Illich-Svitych's successful explanation of irregularities in the length of first-syllable vowels as due to compensatory lengthening brought about by the reduction of final low vowels, cf. Drav. *-ir/-ir-* 'to drag', 'to pull' (corresponding to Alt. *ir'a*), etc. (there are seven such examples in the first two volumes of Illich-Svitych's dictionary), although lengthening does not occur when an etymologically expected high vowel is reduced.

In other instances external comparison compelled Illich-Svitych to introduce changes in the Dravidian reconstruction. Thus, it proved to be the case that entities which correspond externally to sibilants and point to a consonant series reconstructed by Illich-Svitych as composed of laterals, coincided with a class of morphemes containing Drav. *c-/cc-* and giving the reflex *k-* in North Dravidian and Bragui. This led Illich-Svitych to reject the notion that this reflex is secondary, positionally conditioned, or sporadic, and to reconstruct a particular Dravidian phoneme *c<sub>1</sub>-*. On similar grounds he proposed the reconstruction of Drav. *p<sub>1</sub>-* (a lax *p-*), which has variants exhibiting two-fold reflexes: *p- ~ v-*.

In all such instances, one can see that external comparisons inspired Illich-Svitych to examine alternatives which had been rejected or overlooked in the course of internal comparison within the daughter languages, and to reestablish the strict control of the comparativist procedure.

Dravidian languages came into the orbit of Illich-Svitych's Nostratic research at a comparatively late date (later than the other language groups). This seems to explain why we now find many Dravidian parallels that were not used by him even in the first edition of Emenau and Burrow's etymological dictionary. On the other hand, new advances in the acquisition of Dravidian data, particularly Central Dravidian, as a rule have confirmed the proto-Dravidian nature of the parallels proposed by Illich-Svitych on the basis of one of the Dravidian groups. Thus, for example, comparison #160 (*\*kājw* 'to chew'), which, as we can see today, should now include the Dravidian morpheme introduced by Illich-Svitych on the basis of South Dravidian material available at the time.

As I have attempted to show, Illich-Svitych's research was not based on a comparison of reconstructed protoforms taken from etymological dictionaries and certainly not on the comparison of individual lexemes selected from dictionaries, as his critics have sometimes claimed. His work was distinguished by an exceptional attention to the entire corpus of the comparative evidence from individual languages, as well as by a methodological rigor which is often lacking in the work of many of his critics.

Yet another conclusion that emerges from a study of Ilich-Svitych's Nostratic works is that only extreme methodological rigor, precision, and comprehensiveness of scope can ensure true success in the investigation of remote genetic relationships among the world's languages.

Translated by Joseph Schallert

Table 1

glottalized affricates	Ur. kľćća 'small' ~ Kart. kuć Ur. koććΔ 'woven basket' ~ SH ƙ(w)ş
plain affricates	Ur. rućΔ 'crush, destroy' ~ SH rs
voiced affricates	Ur. poć,ka 'thigh' ~ SH phđ Ur. wić,Δ 'see' ~ Alt. üžă

Table 2

Uralic	Altaic	Dravidian	Reconstruction
a	a	a	*a
o	o	o/a	*o
u	u	u	*u
ä	ä	a	*ä
e	e	e	*e
i	i	i	*i
ü	ü/ö	u	*ü

Table 3

The Uralic *ō* in e-stems

Nr.	language word	Finn.	Mordv.	Mari	Perm.	Mansi	Hanty
1	'sinew'	suone-	*sAn	*sūn/sön	*seŋ	*teŋ	*pan
2	'arrow'	nuole-	*nal	*nölö	nel	*ñel	ñal
3	'(fish-) scale'	suomu	*śav	*šüm/ šöm	śem	*sēm	sam
4	'bird cherry-tree'	tuome-	*lam	[lom-bo]	lēm	*lēm	[lōm:lām]
5	'to rub'	huosia	----	čüčeš	?	*sēs-	čač
6	'to build'	vuole-	----	----	vel	----	----
7	'to peel'	kuore-	*kar'				
8	'mountain'	vuore-	----	----	ver	----	----
9	'young'	nuore-	----	nör-ga	----	----	----
10	'way, rank'	juone-	jAn	jön	----	----	----

Table 4

The Uralic *ō* in a-stems

Nr.	language word	Finn.	Mordv.	Mari	Perm.	Mansi	Hanty
1	'intestine'	suole-	*suŋə	šolo	*šul	----	*söl
2	'to lick'	nuole-	*nola	nula	*ñula	ñal-ant	*nöl-/ *ñal
3	'to die'	kuole-	*kulə-	kola-	*kula	kāl	*köl/ *kāl
4	'berry'	puola	----	----	*pul	[*pul]	----
5	'side; half'	puole-	*pola	----	----	----	----
6	'forehead'	kuono	*koŋa	----	----	----	----
7	'tent-pole'	vuole-	----	----	[*yl-]	[*wŭla]	*wöl

Table 5  
The Uralic *ö* in e-stems

Nr	language word	Finn.	Mordv.	Mari	Perm'.	Mansi	Hanty
1	'river'	joki	jov	----	*ju	*jē	*jogañ
2	'arch'	jousi/ joutsī	jonks	[*jānež]	----	[*jÄxt]	*jogæt
3	'door'	ovi	----	----	----	*ēw	*oɣ-
4	'cartilage'	----	----	nörgö	----	*ñēr	*ñarəɣ
5	'cheek'	poski	----	----		*pēt/ pajt	*pōɣəθ/ puɣθ
6	'moisture'	noro, noru	----	nörö, nöra	*ñur	*ñēr	*ñor
7	'to drink'	juo<*joɣe	----	jüēš (3sgPr)	*ju	[*ēj/ej]	*jɔñt'
8	'swan'	juotsen	loksti	jükšə	*juś	----	----
9	'to peck'	nokkia, nokka	----	----	----	nēk <sup>w</sup>	*noɣ-
10	'bosom'	pove	*ponga	[*pongyš]	[pi-]	[*pūt]	[*pūɣəΛ]
11	'three'	kolme	*kolmä	[kym/ kum]	[*kqlm]	[kūɾəm/ kūrm]	koləm
12	'saliva'	kareli nolki	nolga	----	----	----	----
13	'straw'	olke	*olga	----	----	----	----

Table 6

The Uralic *o* in a-stems

Nr.	language word	Finn.	Mordv.	Mari	Perm'	Mansi	Hanty
1	(to) sleep	----	*udə	----	----	----	oθ/aθ
2	dream	----	udoma	[omo]	[qim]	[*uləm/ ūlm]	[aθəm/ oθəm/ upəm]
3	squirrel	orava	*urə	ur	*ur-	----	----
4	peel	Est. kōba	*kuvə	kuvo	----	----	----
5	fence	otava	[*oš]	----	----	*uš	*wač
6	hare	----	*numolə	----	----	----	----
7	to wait	odotta	ušə	wuča (3sgPr)	----	----	----
8	slave	orjA	urě	----	----	----	----
9	awl	ora	*urə	----	----	----	----
10	house	kota	*kudə	kudo	*kɔ-, ka	----	kat
11	orphan	orpo, orvo	urəs	*urwezə	----	----	----
12	male	oras	urəs	----	----	----	----
13	piglet	porsas	purc	----	pgrś	----	----
14	to penetrate	----	suva	----	----	tɔ/tűj	θăŋ
15	mild, weak			[lynzyri]	----	[*lăncen]	[lōńśi/ luńtə]
16	space	jotka	jutkə	----	----	jot, jət	
17	birch	koivu	*kujv (>kig)	kue, kugi		[*kē]	
18	head	oiva	----	wuj	----	*ēwa/ *āwA	oɣ/uɣ/ōɣ
19	son	poika	*pujə	[*pū]	[pi]	*piɣ	păɣ
20	duck	sotka	śulgə	śue	[*śulə]	*sēl'	saj

# THE APPLICABILITY OF EXACT METHODS IN NOSTRATIC RESEARCH (PRELIMINARY REPORT)

Irén Hegedüs

1.0. Nostratic studies endeavor to dive into the prehistory of reconstructed protolanguages; they undertake the task of solving problems which seem inexplicable when viewed from the standpoint of one individual language family. If we want to uncover and examine genetic relations between languages at such an early time, then it is important that we not overlook the advantages of utilizing methods from other fields of research as well as linguistics. The application of extralinguistic methods can help us to verify, as well as to refine, the results of our Nostratic research. Since Nostratics is one of the most interdisciplinary branches of linguistics, as well it should be, the idea of an interdisciplinary approach to the study of Nostratics is hardly an arbitrary one; on the contrary, it seems completely natural, inherent in the theory itself.

2.0. The first group of such specialized methods as these includes modeling, extrapolation and the principle of correspondence; all of these have by now become general metascientific procedures. The inclusion of these methods in Nostratic study is likely to be extremely beneficial to the strength of the general theoretical foundation of these studies.

2.1. MODELING AND THE RECONSTRUCTION OF THE NOSTRATIC LANGUAGE FAMILY. Regardless of the extreme opinions judging the Nostratic hypothesis as being both already proven or unprovable, we can safely state that the construction of a Nostratic Language Family Model (NLFM) is not entirely void of merit. Modeling in general is the result of making hypotheses, i.e. using phenomenon *a* as a model for phenomenon *A* is the result of forming hypotheses about the evolution or structure of *a*.



The hypothesis of departure in constructing in NLFM is the theory that the relations between language families are similar to the relations observable within the individual language families; that is, we assume that the developmental processes after the disintegration of the protolanguages were analogous to those preceding their disintegration. If we accept that the corresponding features in Indo-European languages are not the results of convergence alone, then why should we have any more reason to believe that the systematic correspondences between Indo-European, Uralic, Altaic, and other protolanguages are the result of convergence alone? Hajdú, among other linguists, states that the correspondences between Uralic and other language groups go far beyond the basic vocabulary, and include such structural elements as endings, markers, and derivational elements. He finds that the nature and regularity of these correspondences is such that borrowing, chance similarities or convergence alone simply cannot account for them (Hajdú, 1966, 91). Instead, he proposes that the correspondences originate from prolonged areal contact. My conception of correspondences acquired in areal contact is that if we were to actually strip them down to the bone, they would turn out to be extreme cases of borrowing. Thus, I find Hajdú's solution not quite acceptable, and somewhat self-contradictory: it denies the theory of standard borrowing and substitutes for it a special theory of 'areal contact', a special type of borrowing.

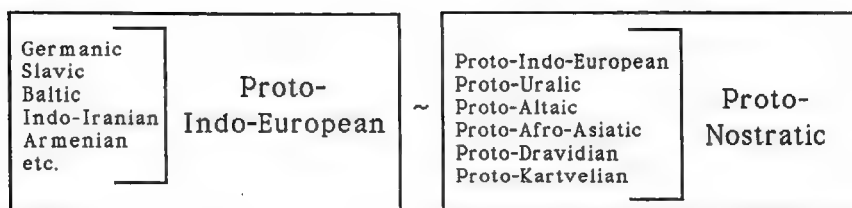
If Proto-Indo-European, Proto-Uralic, and other such reconstructed forms are considered to be legitimate, then they can provide a sound basis for further reconstructions. Discussions about the legitimacy of reconstructions have led me to adopt the viewpoint that the reconstructed units have an identity of their own which reflects the current state of comparative studies, and not necessarily whatever their original identity might have been. Thus we can see that reconstructions, like our knowledge of the laws of nature, can be disproven with the growth of scientific experience. A similar opinion on the legitimacy of Uralic reconstructions is expressed by Honti, who assumes that the conjectured vocabulary posited for Proto-Uralic may be able to help us learn some more definite facts about the distant theoretical connections of the Uralic language family. Thus ef-

forts to reconstruct the protolanguage even in mosaic-like form are useful, not because they may be accurate, but because they can serve as the object of yet further examinations (Honti, 1976: 132, 137).

The NLFM, in much the same way as mathematical models, must be built on a set of axioms (preliminary propositions not verified by the theory), from which all consequent theories are expected to derive. Such a set of theories for the NLFM does not yet exist, but I think that the following two principles should by all means be included in the set:

i. The Nostratic protolanguage was in no respect 'more primitive' than were Proto-Indo-European, Proto-Uralic, and the other protolanguages that descended from it; Proto-Nostratic predates these reconstructed protolanguages by only 10,000 years at the very most. If Proto-Nostratic is to be dated at around 15,000 B.C., that places its existence around 20 millennia after the emergence of articulate human language. This axiom may sound self-evident, but it is certainly not unnecessary, as there are still several misconceptions regarding Proto-Nostratic as some kind of universal proto-speech or as the primordial language of *Homo sapiens*. (Cf. Gluhak, 1977: 54; Serebrennikov, 1982: 55, 56). This misconception has been criticized by Dybo as well (Dybo, 1984: 10).

ii. Another axiom for the NLFM would be the assumption of an analogy between the trends of linguistic development within and between the individual language families belonging to the Nostratic macrofamily. This axiom could be formulated as follows:



The interpretation of the axiomatic approach does not require the a priori evidence of the axioms. The question as to whether or not an axiom is true can be answered by interpreting the set of axioms themselves. If the interpretations are possible or theoretically inferable, then the axioms can be accepted as formally true.

**2.2. EXTRAPOLATION AND THE PRINCIPLE OF CORRESPONDENCE.** In exploring unknown territories, scientists often resort to the general theory of extrapolation. The essence of extrapolation is that certain methods applied in earlier research are carried over to unknown territories. This procedure is based on the principle of correspondence that regulates the connection between old and new theories and secures the continuity of scientific research and the integration of a new hypothesis into previous knowledge.

Nostratic scholars are often accused of unjustifiably extending the traditional historical-comparative method to such an early stage of history that the method itself becomes uncertain and useless, due to the obscurity caused by the considerable span of time between the Nostratic time period and the present. According to Kiparsky's view, the traditional comparative method is applicable up to 20,000 years back in time (Kiparsky, 1976: 67). Nostratic studies certainly do not attempt to predate that! but even if we consider Kiparsky's assessment too generous, we still should not forget that the Nostratic theory is still largely based on extrapolation, since its basic assumption is that the laws governing language change after the disintegration of the protolanguages cannot have been very different from those governing language change before their extinction. Thus, comparison

within the individual language families can also be utilized as previous experience in comparisons between them.

Comparative studies within the individual language families seem to be confined by the temporal limits set by their reconstructed protostages. This borderline has been crossed by Nostratics, a change which I consider to be a quantitative one, in agreement with Helimsky (1986: 251). The historical development of languages is continuous; it is only our practice of reconstructing protolanguages that has created this artificial borderline between protolinguistics and paleolinguistics. This quantitative change in the attitude towards the time periods of the reconstructions, however, consequently produces qualitatively different results; it is these results which largely justify the existence of the Nostratic approach. Nostratics also meet the requirement that a new theory not only has to explain the new state of affairs, but also has to explain the derivation of previously known knowledge from it. And if the theory is such that even the gaps in the previous knowledge can be filled up with its introduction, then the extrapolation has been fully grounded and successful.

3.0. The other group of specialized methods which should be used includes probability calculus, factor analysis and statistics. These methods, based directly on mathematics, can positively influence the practical course of Nostratic research.

3.1. CALCULUS OF PROBABILITY. Linguists studying the correspondences in Nostratic languages are continually faced with the problem of how to face these correspondences; chance resemblance and borrowing can very often obscure the original genetic affiliations. At this point, exact mathematical methods can be of much assistance. Probability is most efficient in describing chance phenomena, as has already been exemplified by Dolgopolsky in his classic article (Dolgopolsky 1964: 53ff). His procedure has been criticized by Róna-Tas, who states that Dolgopolsky's procedure has failed on its techniques of sampling; he states that because language is a system, methods based on random sampling for studying linguistic phenomena are inadequate (Róna-Tas, 1978: 221). Róna-Tas may be right in

stating the inadequacy of random sampling, but he seems to have overlooked the fact that it is not a random sample that Dolgopolsky has worked with. What he has used in his probabilistic approach is known in statistics as a concentrated sample. The use of a concentrated sample basically means that the procedure requires a special sample that must exclude borrowings; i.e., contains only the most stable units. For this purpose, Dolgopolsky first filtered out borrowings from the sample by the statistical examination of morpheme retention. Doerfer has two objections against Dolgopolsky's calculations:

1. 'Grundsätzlich ist die Formel, die Dolgopol'skij verwendet, diejenige, die man anwenden muß, wenn z. B. ein Würfel 100 Mal nacheinander 6 würfelt (und man bräche das Würfeln ab). In diesem Falle wäre klar, daß der Würfel gefälscht ist (kein Zufall vorliegt, sondern Kausalbeziehung, dem entspricht aber bei Sprachen eben die Verwandtschaft, bzw. die Entlehnung). Hier darf man nun aber nicht übersehen, daß dieselbe Zahl 100 in der Wahrscheinlichkeitsrechnung ganz entgegengesetzte Bedeutungen haben kann: Werfe ich 100 Mal nacheinander 6, bedeutet dies, daß Zufall praktisch ausgeschlossen ist, kausale Bedingtheit praktisch sicher. Werfe ich dagegen 600 mal, und davon 100 mal 6, bedeutet dies, daß kausale Bedingtheit praktisch ausgeschlossen ist, Zufall praktisch sicher.' (Doerfer, 1973: 115)

This is a mere misinterpretation of the procedure carried out by Dolgopolsky. The die-casting simile that Doerfer draws is not only defective, but has simply nothing to do with the case at hand. Any linguist would know that the probability that two morphemes carrying the same meaning in two different languages will coincide is very high. But when comparing four, five, or more languages, this likelihood is reduced to the insignificant. Greenberg has pointed out that one single item present in four or five languages at the same time has a larger capacity for a correspondence to be proven than do dozens of pairwise correspondences (Greenberg, 1953: 271). Furthermore, if 8 out of 100 words coincide in two languages, then only one out of every 25,000 words should coincide by chance in the comparison of five languages. Practically, this means, as is also emphasized by Hajdú (Hajdú, 1966: 33), that we have to compare 1000 words from each of the five languages and then repeat the process 25 times to find even one chance resemblance. So even linguists who

reject or are unconcerned with the Nostratic hypothesis must admit that multiple comparisons have an advantage of minimizing the probability of chance correspondence; herein lies the benefit of multilanguage comparison. So the die is cast! The other objection that Doerfer raises is against Dolgopolsky's sampling technique:

2. 'Er hat zur Emplification seiner These willkürlich 15 Wörter herausgegriffen wo sich bei den verglichenen Sprachfamilien relativ viele Ähnlichkeiten fanden...Er hat weder dynamischen Zufall, noch Lautsymbolik berücksichtigt.' (Doerfer, 1973: 114-115)

As far as dynamic coincidence is concerned, that is exactly what the statistical examination of morpheme retention is aimed at. By 'dynamic coincidence', Doerfer means the convergence of the sound shape of words ('lautliche Konvergenz'), which Dolgopolsky tried to discard by selecting the stablest possible items. From an etymological point of view, however, the article may contain some fallacies, as Dolgopolsky himself admits in the introduction to the English translation, published more than two decades after the original; it is still methodologically sound.

Here we must state once again that Dolgopolsky's is a concentrated sample, and as such, it has to be arbitrary. It seems to be the case that one linguist's perfume is another's poison: while Róna-Tas has dismissed the probabilistic method on the grounds that it is based on a random sample, Doerfer rejects it on the grounds that it is based on an arbitrary sample.

3.2. FACTOR ANALYSIS. For the determination of linguistic relationships, Herdan proposed the method of factor analysis, which 'enables us to determine the 'saturation' of a given language with the parent language as the factor common to all languages, the influence of what may be called secondary factors, such as geographical position, and finally, the amount of 'specificity' as that which distinguishes a given language from all others in the group.' (Herdan, 1964: 125) He used Fronzaroli's sample of isoglosses from Semitic languages (Fronzaroli, 1961: 348ff). Later, Fronzaroli pointed out that Herdan's procedure has some shortcomings which could be elimi-

nated by multiple factor analysis. Fronzaroli considers multiple factor analysis to be capable of extracting not only the common portion of correlations, but also other components, such as the speed of the typological evolution and the weight of areal contacts (Fronzaroli, 1973: 109). My own suggestion is that we calculate the connectivity in the Nostratic branches by selecting phonological, morphological, and lexical isoglosses as a representative sample of features either appearing or missing in the different branches. On the basis of this, we can construct a chance model of connectivity for each branch which runs parallel to the others, as well as establish the saturation of each branch with the common Nostratic components.

Since my presupposition is that the morphological data may produce a different picture of connectivity between the Nostratic branches, it seems reasonable to carry out factor analysis on the basis of morphological isoglosses as a separate procedure from the phonological and lexical ones. Although factor analysis has as of yet only been applied to languages whose relationship is already proven, I can see no theoretical condition which would contradict the applicability of this method to Nostratic languages.

3.3. Simple statistical analyses can also further the development of Nostratic studies. The connections between the branches of the Nostratic macrofamily are illuminated by the calculations done by Korenchy on the basis of the first volume of the Nostratic dictionary by Illich-Svitych (Korenchy, 1975: 109-115). The strength of affinity and the degree of affiliation become more tangible, which helps us to formulate the spacial and temporal characterization of the relations within the Nostratic language family. Korenchy's results should be updated by adding the material from the second volume of Illich-Svitych's Nostratic dictionary, as well as from the first fascicle of Volume Three.

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## INTERPHYLETIC COMPARISONS

## NOSTRATIC AND SINO-CAUCASIAN

Sergei Starostin

After the appearance of Vladislav Illich-Svitych's *Nostratic Dictionary* (= Illich-Svitych 1971- ) – a decisive step in proving the genetic relationship of the Nostratic languages – several crucial questions still have to be answered. They can be formulated as follows:

- a) How, precisely, should the Nostratic languages be classified? (For example, does there exist a distinct Altaic branch of Nostratic? Can the Nostratic languages be subdivided into 'Eastern' and 'Western' Nostratic? What are the exact boundaries of the Afro-Asiatic branch within Nostratic?)
- b) Are there any other linguistic families that can be included in Nostratic?
- c) Can we locate the hypothetical disintegration of Proto-Nostratic in space and time?
- d) If there are other macrofamilies besides Nostratic (which now seems to be obvious), is Nostratic genetically related to them?

Any progress in answering any of these questions could be of great importance for our understanding of linguistic prehistory. In this paper I shall express my present views on some of them.

A. Although there has been much debate about the problem of Altaic as a branch of Nostratic, I think that the Altaic family (which includes Turkic, Mongol, and Tungus, as well as Korean and Japanese), can be documented as a distinct entity, and the date of Proto-Altaic split can be placed somewhere on the border of the 6<sup>th</sup> and 5<sup>th</sup> millennia B.C.

The problem of Afro-Asiatic is much more complicated. In fact, even among the advocates of the Nostratic theory there is no consensus on the place of Afro-Asiatic within Nostratic. Recent research, both comparative-lexicographic and lexicostatisitic, has revealed a great degree of diversity within Afro-Asiatic itself. Preliminary

glottochronological analysis (more positive results could be obtained only after compiling the new Afro-Asiatic etymological dictionary) seems to indicate the possible date of the Proto-Afro-Asiatic split as somewhere in the 11<sup>th</sup>-10<sup>th</sup> millennium B.C. — which means that Afro-Asiatic must be as old as Nostratic itself (all other subgroups of Nostratic reveal a much higher rate of coincidences within the basic vocabulary). I think that the final solution to this problem should be postponed until we obtain an improved reconstruction of Proto-Afro-Asiatic and its complete volume of etymologies.

One consequence of this 'cautious approach' to Afro-Asiatic is that I prefer presently to exclude Afro-Asiatic material from the Nostratic comparisons. This does not mean, of course, that Afro-Asiatic parallels for Nostratic roots presented in Illich-Svitych's dictionary and elsewhere (notably in Aron Dolgopolsky's works) are all accidental 'look-alikes': they may purely reflect a relationship between Afro-Asiatic and Nostratic at some deeper level; I shall return to this point later in this paper.

As for the division of Nostratic into 'Eastern' and 'Western', I think that it certainly exists (Indo-European and Kartvelian have a lot of individual common features), but is areal rather than genetic by nature (lexically Indo-European seems to be even closer to Uralic than to Kartvelian). Again, the position of Afro-Asiatic relative to Nostratic seems to speak against the Western Nostratic unity (features that Proto-Afro-Asiatic shares with Proto-Indo-European and Proto-Kartvelian can be explained as a result of a secondary 'linguistic alliance'.)

B. Several attempts have been made to relate some other linguistic families (Eskimo-Aleut, some American languages, Yeniseian, Nivkh, Sino-Tibetan, North Caucasian) to Nostratic. The only probable theory by now seems to be that of including Eskimo-Aleut in Nostratic (Oleg Mudrak). On the other hand, I have tried to demonstrate the special relationship between Sino-Tibetan, North Caucasian and Yeniseian. ('Sino-Caucasian', which must be dated approximately to the 9<sup>th</sup> and 8<sup>th</sup> millennia B.C.; rather probable is also the inclusion of Na-Dene languages into Sino-Caucasian, proposed by S. L. Nikolaev)

There is also a good critical survey of this problem, by Eugene Helimsky (1984). I will therefore in this paper confine Nostratic to Indo-European, Kartvelian, Uralic, Altaic, Dravidian, and probably Eskimo-Aleut.

Since I am a supporter of glottochronology (although I believe that some of its principles are to be modified), I believe in the possibility of absolute linguistic dating (although, of course, highly approximate). One point, however, must be especially stressed: we can obtain satisfying glottochronological results only for language families with a well-developed comparative phonology and lexicography. Nothing has done more harm to glottochronology than its uncritical application to poorly studied linguistic data. Since we can not yet claim to have full knowledge of Nostratic comparative phonology (and what is perhaps even more important — of Nostratic comparative vocabulary; I am sure that the bulk of existing common Nostratic roots can be substantially increased), any attempts to date the Proto-Nostratic split by means of glottochronology are in fact premature. Still, a very approximate guess is 10<sup>th</sup>-12<sup>th</sup> millennium B.C. (This dating is of course liable to future verification; it seems however to be probable as well for some reasons other than glottochronology). As to the possible Nostratic homeland, I can only say that it deserves further joint investigation by linguists, archaeologists and other specialists, and depends largely on improving our knowledge of Proto-Nostratic vocabulary.

Recent decades have witnessed substantial progress in long range linguistic comparison. Besides Nostratic, we can now more or less positively speak of the existence of several other macrofamilies: Austro-Tai (and probably even broader: Austric), Afro-Asiatic (if excluded from Nostratic), Sino-Caucasian, Amerind. Comparative research within most of these macrofamilies is only beginning (exceptions are, of course, Afro-Asiatic and Nostratic itself, which are somewhat better explored). Still I think that the question about mutual relationship of macrofamilies is wholly justified — even if the answer by now must be but preliminary.

The rest of this paper will present an attempt to make a genetic link between Nostratic and Sino-Caucasian. To do that, I shall first put forward some phonological observations, since any comparison is futile without at least rough phonetic correspondences.

1. NOSTRATIC. I will in general preserve the phonological system of Proto-Nostratic as outlined in the *Nostratic Dictionary*. But there are some points I would like to dwell upon:

a) The system of Nostratic affricates and sibilants probably needs a revision (see Dolgopolsky 1974). But recently, some work has been done on reinterpreting the affricate systems of Proto-Kartvelian (Y. Testeleets) and Proto-Altaic (myself), and until the results of these studies are checked with Illich-Svitych's and Dolgopolsky's reconstructions, I would prefer to hold onto the original notation.

b) The reconstruction of the set of uvular consonants for Proto-Nostratic by Illich-Svitych was based only on Kartvelian evidence. However, all other Nostratic languages lack this series of stops and it is quite probable that in Kartvelian they are secondary, acquired under influence of neighboring North Caucasian languages. External evidence shows that PN \*q' has exactly the same counterparts as PN \*k', and we will treat them as one and the same phoneme (reflexes of \*k' and \*q' coincide in all Nostratic languages except Kartvelian). As for Nostratic uvulars \*q and \*ɢ, they can be treated in most cases as the velar spirants \*x and \*ɣ (although in some cases Kartvelian \*q seems to be a result of a secondary shift \*k > \*q analogous to \*k' > q').

c) There has been a recent attempt to reinterpret the Nostratic system of stops (Bomhard 1987), stimulated mainly by the so-called glottalic theory of Indo-European stops. According to Allan Bomhard, Indo-European voiced (aspirated) stops correspond to Kartvelian voiced stops (in this point his theory coincides with that of Illich-Svitych); Indo-European glottalized (traditionally, voiced unaspirated) stops correspond to Kartvelian glottalized stops, and Indo-European voiceless (aspirated) stops. The two latter correspondences

are strongly opposed to Illich-Svitych's rules (according to which PIE \*d, \*g = PK \*t, \*k; while PIE \*t, \*k = PK \*t', \*k').

If one excludes Afro-Asiatic data (as we proposed to do above), the weakness of Bomhard's theory immediately becomes apparent. Searching through the material adduced in Bomhard 1987, I could not find a single example of PIE \*t (or \*th in the 'glottalic' notation) = PK \*t or PIE \*k (\*kh) = PK \*k. On the other hand, in one of Illich-Svitych's basic works (Sootv.) we find several good examples of PIE \*d (or \*t' in the 'glottalic' notation) = PK \*t and PIE \*g (\*k') = PK \*k (cf. PIE \*del(H)- 'split, trim' = PK \*tal- 'trim, plane'; PIE \*deH- 'drip, flow' = PK \*tx- 'pour', PIE \*skeid- 'split' = PK \*c<sub>1</sub>it- 'hew', PIE \*ǵal(ō)u- 'husband's sister' = PK \*kal- 'woman'), and more examples can be added. As to the correspondence PIE \*d(\*t') = PK \*t', PIE \*g(\*k') = PK \*k'(or \*q'), in Bomhard 1987. we find four examples of it: PIE \*deH- 'cleave asunder, divide' = PK \*t'ex- 'to break'; PIE \*gel/\*gol/\*gǵ- 'neck, throat' = PK \*q'eli id. (but cf. PIE \*kol- id.), PIE \*gwer- 'to swallow; neck, throat' = PK \*q'war- 'pharynx, throat, gullet' (probably PK \*q'orq'- [See Klimov 1964:213] is meant); PIE \*g<sup>w</sup>el- 'strike, kill' = PK \*q<sup>w</sup>el- 'slay, kill'. Only the last example is satisfactory (in fact, Illich-Svitych lists it [1967:370] in spite of its irregularity). On the other hand, Bomhard disregards completely a very considerable number of correspondences PIE \*t, \*k = PK \*t', \*k'(\*q'), cf. (in Sootv.): PIE \*terp- 'be satiated, satisfied' = PK \*t'rp- 'enjoy'; PIE \*lat- 'wet, liquid' = PK \*lt'w- 'soak'; PIE \*mat- 'worm, grub' = PK \*mat'l- 'worm'; PIE \*k<sup>w</sup>el- 'turn round' PK \*k'wer- 'round'; PIE \*kér- 'bind' : PK \*k'(a)r- id.; PIE \*ket- 'building, room': PK \*k'ed- 'build'; PIE \*kel- 'rise, high' : PK \*k'latx- 'high'; PIE \*kér-d- 'heart': PK \*mk'erd- 'breast'; PIE \*luḱ- 'lynx': PK \*lak'(w)- 'dog'; PIE \*k<sup>l</sup>eu- 'hear': PK \*q'ur- 'ear'; PIE \*(e)lek- 'elbow': PK \*d(l)aq'w- id. etc. That is why I now deem it impossible to justify Bomhard's revision of the Nostratic phonological system and think that the original system of correspondences established by Illich-Svitych is to be preserved (although its phonetic interpretation may be different; see below).



2. SINO-CAUCASIAN. In 1984 I presented a rather complicated system of correspondences between North Caucasian, Sino-Tibetan and Yeniseian (Starostin 1984:20-21). However, recent developments in the field of North Caucasian comparative phonology (connected with my joint work with Sergei Nikolaev on the Etymological Dictionary of North Caucasian languages) have now made it possible to modify and simplify this system considerably.

It appears now that Proto-NC had no opposition between voiced and tense voiceless stops (\* $\bar{k}$ -g, \* $\bar{t}$ -d etc.), as we originally thought. This opposition can be shown to have arisen secondarily only in Eastern Dagestan languages due to a split of a single Proto-Dagestanian voiced stop series. Now the so-called geminates in Proto-NC (e.g. \*cc, \* $\bar{c}\bar{c}$ ) appear to have had a specific distribution: within one root there could be combined only either 'geminated' consonants (e.g. \*qqaqqa 'seed, grain') or 'non-geminated' e.g. č'ăč'wV 'stone'), the only obligatory exception being the roots with an inlauting sonant (e.g. \*cwarggwV 'weasel, martin', not \*ccwarggwV). Thus it is possible to regard Proto-NC 'geminates' as allophones of simple (non-geminated) consonants arising under special conditions (probably prosodic, something like 'tense voice'). Below we shall mark such cases by underlining the neighboring vowel (e.g. \*č'ăč'wV as opposed to \*qăqă and \*cwărgwV). It is necessary to note also that the sounds that we originally interpreted as 'strong' ('tense') spirants (\*-s, \*-x, etc.) reveal the same kind of distribution as 'geminates' and thus can be also treated as allophones of simple ('lax') spirants (\*s, \*x, etc.).

After these (and some other) modifications have been introduced, the reinterpreted set of correspondences between Sino-Caucasian languages looks as follows:

SC	NC	ST	PY
*p	p	ph/bh,-p	p
*b	b	p(h),-p	p/b
*p'	p'	b,-p	b
*t	t	th/dh,-t	d
*d	d	t(h),-t	t
*t'	t'	t/d,-t	d
*k	k	k/gh,-k	g
*g	g	k(h),-k	k
*k'	k'	k(h)/g,-k	g,-k
*s	s	s,-Ø	s(/d)
*c	c	c(h),-t	č/s
*ž	ž	s/žh,-t	ž/s
*c'	c'	s/ch,-t	c/s
*st	c	?	t
*sd	z	ch-	t
*st'	c'	s-	t
*š	š	š,-Ø	s(/d)
*č	č	č/ž,-t	č-/ž-,s
*ž	ž	č-	č-, s/ž
*č'	č'	č-/žh,-t	č-/ž-, s/ž
*št	č	-t	t
*šd	ž	č(h)-	t
*št'	č'	?	t
*ś	ś	s,-Ø	s(/d)
*ć	ć	č,-t	ž-, s
*ž	ž	č,-t	ž-, s
*ć'	ć'	č/š,-t	c/s
*λ	λ	l	Ø-,l/í
*ʎ	ʎ	l/ʎ,-k	?-, r
*ɣ	ɣ	l/ʎ,-k	k-,r
*λ'	λ'	l/ʎ,-k	j-,k-, l(í)
*xk	ʎ	-k	-x-
*xg	g	gh,-k	q-, -x/-x-

SC	NC	ST	PY
*xk'	k'	-k	q-, -9-(?)
*x	x	x/q(h)-, -Ø/-k	x/x
*x̥	x̥	k(h)qh <sup>(w)</sup> , -Ø/-k	x̥/q
*q	q	q~ 9, -k	x̥-, q/9
*9	9	q(h)/9, -k	x̥-, q/9
*q'	q'	Q <sup>(w)</sup> /K, -k	x̥/q
*xq	q	k	x(/k)
*x9	9	k	k
*xq'	q'	k	g/x

For other consonants (sonants, voiced spirants, laryngeals and pharyngeals), see Starostin 1984:22.

3. NOSTRATIC AND SINO-CAUCASIAN. At present, the lexical evidence presented below can be regarded only as a preliminary list. I have confined the Nostratic vocabulary strictly to the set of roots presented in the *Nostratic Dictionary* and Illich-Svitych 1967 (only a few roots quoted in several of Dolgopolsky's papers have been added) and have completely ignored parallels where only one of the Nostratic subgroups is present (such as Altaic-Sino-Caucasian). It is thus evident that the list can be substantially enlarged, but that is a matter for future studies.

For a considerable amount of roots in the list parallels from other macrofamilies (at least from Afro-Asiatic and Austric) can be found; in fact, a great number of Afro-Asiatic parallels are already published in the works of Illich-Svitych, Dolgopolsky, and others. I have no reason at all to suppose a closer genetic link between Nostratic and Sino-Caucasian than, say, between Nostratic and Afro-Asiatic or between Afro-Asiatic and Sino-Caucasian. (In fact, a preliminary study together with A. Militarev and V. Orël has revealed quite a lot of probable isoglosses between Afro-Asiatic and Sino-Caucasian.) That is why no attempt has been made to reconstruct 'Proto-Nostratic-Sino-Caucasian' — one should rather postpone it until we

know more about the inter-relationship of the world's several macrofamilies (phyla).

However, some observations of phonological nature certainly can be done. They concern primarily the system of stops, where the correspondences are as follows:

Nostratic	Sino-Caucasian
*p-, -p-/ -p'-	*b-, -p'- 1)
*p'	*p
*b	*b
*t	*tw, *t'w
*t'	*t, *t', *dw
*d	*d
*k	*kw, *k'w, *qw, *q'w
*k'	*k, *k', *q, *q', *gw
*g	*g, *g 2)

Notes:

- 1) The distinction between intervocalic \*-p- and \*-p'- in Nostratic is rather vague, and in many cases we are not able to draw it. On the other hand, word-initial \*p' is extremely rare in Sino-Caucasian. Therefore I thought it possible to unite the correspondence rows PN \*p : SC \*b- and PN \*-p-/ -p'- : SC \*-p'-.
- 2) There are three cases when SC \*g(w) or \*g(w) correspond to PN \*k (48, 51, 52): in all of these cases there appears a postvocalic -j-.

The above correspondences are hard to explain if we presume that PN glottalized consonants were really glottalized. However, if we keep in mind that the reconstruction of PN glottalized (as well as uvular) stops is based only on Kartvelian evidence, and suppose that the Kartvelian glottalization may have substituted (probably under a substratum influence) some other earlier laryngeal feature, things become much easier. All of the above correspondences can be explained by assuming that:

- a) in the dental and velar series original glottalized (non-labialized) stops were preserved in SC but merged with plain stops in PN, yielding probably aspirates (in fact, reflexes of these consonants are aspirated in Indo-European and Altaic; the Kartvelian shift of aspirated to glottalized stops, as already mentioned, must be due to substratum).
- b) the additional feature of labialization vanished in PN, but conditioned a specific shift of laryngeal features: original aspirated labialized stops (going back to voiceless and glottalized labialized stops) must have lost their aspiration and became PN \*t, \*k (reflexes of these consonants are unaspirated in Indo-European and Altaic); while original voiced labialized stops must have inversely acquired aspiration and merged with voiceless aspirated stops.
- c) labial stops could not have been labialized, and therefore in this series we observe straightforward correspondences (SC \*b = PN \*b, SC \*p = PN \*p' [= \*ph]). However, original labial glottalized consonants did not merge with plain voiceless stops in Nostratic, being reflected as a combination \*pw (i.e. resulting in PN voiceless \*p).

Thus the external evidence seems to indicate that consonants traditionally reconstructed in Nostratic as glottalized (emphatic) had, in fact, been voiceless aspirates — and this also may better explain some of their reflexes in Nostratic daughter languages.

Another observation can be made concerning the fate of lateral consonants in Nostratic. In most cases the Sino-Caucasian laterals correspond to Nostratic \*l (or \*l + velar in the intervocalic position, see examples 40, 45, 96, 100, 103, 106, 108, 120, 138, 142, 200, 202, 204; this \*l gets lost after a preceding \*-r-, cf. examples 114, 122). However, if a liquid \*l follows a lateral affricate, the latter by dissimilation becomes a stop:

- a) a dental stop if the original lateral had no labialization (cf. examples 191, 197), and
- b) a velar stop if the original lateral was labialized (cf. examples 60, 86, 199).

Of course, this is only a beginning: there are still many gaps both in the Nostratic and Sino-Caucasian reconstructions, and the data of

other macrofamilies are yet to be investigated. No correspondences are as yet available for the complicated systems of Nostratic and Sino-Caucasian affricates, spirants and postvelar consonants, as well as for vowels. Still I think that the existing evidence is already enough for assuming a distant genetic relationship between the two macrofamilies of the Old World.

#### LEXICAL PARALLELS BETWEEN NOSTRATIC AND SINO-CAUCASIAN

1. PN \*balk'a 'shine, gleam' (OS 5): ST \*Pōk 'white'.
2. PN \*bongä \*(~ \*p'-) 'thick, swell' (OS 17): SC \*pVnKV 'swell' (ST \*phōŋ/\*phuŋ 'swell, blow up', PY \*pʔŋ 'swell, swelling')
3. PN \*boŕa 'grayish-brown' (OS 18): NC \*bHūrV id.
4. PN \*bulV 'to mix, stir up' (OS 20): ST \*puał
5. PN \*baŕV 'much, enough' (OS 28: PA \*bājV 'rich, plentiful' should be added): SC \*bVHV 'big, many' (ST \*pā 'big, great', PY \*bəj- 'many', NC > WC \*bHV 'thick, big').
6. PN \*bara 'big, good' (OS 7): ST \*p(h)Vr 'big, great, increased'
7. PN \*biĆa 'small' (OS 11): NC \*bi(n)c'V id.
8. PN \*calu 'split, cut' (also 'mow') (OS 33): SC \*cV4HV 'mow, reap' (NC \*ʔo-cV/1/- 'mow', \*cō4V 'scythe', ST \*chāH (~ \*chāH) 'reap').
9. PN \*cujħa 'thorn' (OS 34): ST \*cūH id.
10. PN \*c'ājħa 'shine, shimmer' (OS 37): SC \*c'AjV 'shine, light; fire' (ST \*ziāj 'shine, light', NC \*c'aj 'fire; glitter').
11. PN \*curV/\*corV 'drip, ooze' (OS 35): SC \*ʒwVrV (~ \*sdw-) 'strain, pour' (ST \*/ch/ōr, NC \*ʔi-ʒwVr-).
12. PN \*ćap'a 'beat, chop' (OS 41): ST \*/č/Vp 'break, tear up'.
13. PN \*/ćaj/rV 'pale, white, yellow' (MS 363; roots with the meaning 'moon' should be kept apart, see below): SC \*c'ArV (~ \*st'-) id. (ST \*sVr /~ \*ch-ʔ/ 'yellow, gold'; NC \*H-c'arV 'gray, pale').
14. PN \*ćarV (~ \*ć'-) 'rind, crust' (OS 47): SC \*štArV id. (PY \*tər-ap, NC \*čHārV).

15. PN \*č'abV (MS 344) 'clay, glue': SC \*č'ebV 'clay, model' (ST \*čap 'to stick, adhere', NC \*č'ebV 'clay, model').
16. PN \*/č/ämV 'astringent, sour' (OS 54, MS 368 [with irregular correspondences between PIE and PU]): SC \*c'wE/m/HV 'salt' (ST \*čum (~ c-), NC \*c'w~~en~~HV).
17. PN \*č'ik'V 'cut' (OS 55): SC \*č'wV~~k~~'(w)V 'a cutting tool' (ST \*žh/āk~~w~~ 'chisel', PY \*čok 'axe', NC \*č'w~~k~~'wV 'knife').
18. PN \*č'V'mV 'eat' (OS 57: only Kartvelian): SC \*č'wVmV 'chew, hold in mouth' (ST \*žhī(a)m (~ -ē-), NC \*He-č'wVm-).
19. PN \*č'alHa (~ č-) 'spread out, broad, plain': SC \*žVIHV id (ST \*čel (~ ž) 'spread out', NC \*ž~~l~~HV 'plain').
20. PN \*č'ok'V (~ č-) 'big, many' (MS 331): SC \*č'Vq~~w~~V id (ST \*čok 'enough, plenty', (?) PY \*suK- 'thick', NC \*(HV)-č'əq~~w~~V 'big'). We should expect \*-k- in PN: -k- is probably due to assimilation.
21. PN \*dikV 'earth, clay' (OS 69): SC \*dVQV 'clay' (ST \*/t/iak, PY \*taq-).
22. PN \*ga(HV) 'take, obtain' (OS 77): SC \*(a)gV 'take, hold' PY \*-aq-, NC \*ʔ~~a~~-gV-).
23. PN gändu 'male' (OS 79): SC \*KenT~~w~~V 'man, male' (PY \*ke't 'man', NC \*kwVn(V)t'V '(young) man, male'). Due to dis- or assimilations it is hard to reconstruct precise laryngeal features for SC.
24. PN \*gUjra 'antelope, deer' (OS 90, 93: 90 and 93 are probably one and the same root): SC \*xgVjV 'deer' (ST \*ghij '(barking) deer', PY \*/q/Vja 'deer').
25. PN \*güPa 'to bend, bow' (OS 92): ST \*g(h)ü~~p~~ id.
26. PN \*Yark'u (c\*Yak'ru?) 'bend' (OS 97): SC \*-gwVrV id. (ST \*kuar, NC \*ʔi-gwVr-).
27. PN \*Yuru 'flow, flood' (OS 98): SC \*HwVrHV 'flow; pool, water body' (ST \*Hor 'flow, soak'; NC \*ʔwirHi 'water pool').
28. PN \*YVmV 'darkness, night' (OS 99: only Kartvelian): SC \*xVmHV 'dark, evening' (ST \*YVm 'dark, shadow', PL \*xIam 'evening, darkness').

29. PN \*Hanga 'open (the mouth), opening' (OS 105): SC \*HamgV 'hole, opening' (ST \*khāH 'opening', PY: Ket., ag-di 'mouth cavity', NC \*hōmgV 'hole, window').
30. PN \*Henka (~ Hekna) 'to burn' (OS 106): SC \*-ḡAnV 'to warm up' (ST \*kaṇ 'roast, fry', PY \*(h)əqan- 'boil', NC \*He-ḡVn- 'warm up').
31. PN \*H/E/mi 'suck, swallow' (OS 109): ST \*ʔVm 'drink, suck, hold in mouth'.
32. PN \*Hok'i 'sharp edge' (OS 113): SC \*-xk'V 'sharp, sharpen' (PY: Ket. i:- 'to sharpen', NC \*ʔV-k'V 'sharp(en)').
33. PN \*Homsa 'meat' (OS 114): SC \*jVmcV 'ox; meat' (ST \*chu (~ -o) 'a kind of ox', PY \*ʔise 'meat', NC \*jəmcə 'ox').
34. PN \*Ho(k)sV 'ash-tree' (OS 117): PY \*ʔoksi 'tree'.
35. PN \*Huk'a 'eye, see' (OS 118): SC \*-gwV 'see' (? ST \*kʷē-n (~ \*gʷ-) 'look' — can be related here if the -n is a suffix: NC \*ʔagwV 'see').
36. PN \*Huwa 'flood, stream' (OS 119; cf. also IE: Hitt. ḫeu- 'rain'): SC \*-yʷV 'rain, to rain' (ST \*(r)-qhʷaH, PY \*xu-r, NC \*ʔV-yʷV).
37. PN \*ʔanxV 'breathe' (OS 125: perhaps it would be better to add PA \*ʔinV 'live, life' and reconstruct PN \*HinxV): SC \*HwEnHV 'blood; breath, soul' (ST \*(s)-yʷij 'blood; breath': NC \*hwenHV 'blood'). The semantic shift 'blood ↔ soul, breath' is fairly common.
38. PN \*ʔaSa 'fire, be hot' (OS 127): SC \*-cV 'burn, heat' (ST \*ca/\*cha 'hot, heat', NC \*ʔe-cV 'hot, heat, roast').
39. PN \*Ha 'be, become' (OS 102): SC \*ʔa(HV) id. (ST \*ʔa, NC \*ʔa(hHV)-).
40. PN: ʔe1A 'live' (OS 131): SC: -ʔV 'be; stay' (ST \*ʔV 'stay', NC \*ʔe-ʔV 'be, become').
41. PN \*ʔesA 'be, settle down' (OS 132): SC \*-swV 'sit' (PY \*-VsV, NC \*ʔo-swV).
42. PN \*ʔilV 'deer': ST \*la 'musk-deer'.



43. PN \*<sup>s</sup>Ek'u 'water, drink' (OS 139: Pa \*āk- 'flow' should be added): SC \*-qV 'fluid, drink' (ST \*Ku 'fluid, to spill': PY: Ar. -ag- 'drink': NC \*<sup>ʔ</sup>V-qV 'drink').
44. PN \*jela 'bright' \*(OS 148) : ST \*liaj (~ 𐎧-) 'gleam, glitter'.
45. PN \*k'alíV 'peel; bark, skin' (OS 156: initial k'- because of PA \*k'alí-; forms with the meaning 'naked' should be kept apart): NC \*qā<sup>ʔ</sup>V 'bark, skin'.
46. PN \*kanpV 'soft excrescence (mushroom; lip)' (OS 158) : SC \*k'wVm(P)V 'lip' (ST \*k(h)am; NC \*k'wēm(p')-t'ī).
47. PN \*karV/\*kurV 'crane' (OS 159): SC \*q'(w)Vrq'wV id. (OC \*g(h)āk<sup>w</sup>, NC \*q'(w)ṛq'wə).
48. PN \*kājwV 'chew' (OS 160) : SC \*x9VjV 'bite' (ST \*k(h)aj, NC \*<sup>ʔ</sup>V-9V-).
49. PN \*kENV 'know' (OS 163) : ST \*qēn 'see, know'.
50. PN \*kirHV 'old' (OS 165) : ST \*Kri 'old'.
51. PN \*koja 'moth, grub, worm' (OS 167): SC \*gwVjV 'worm' (ST \*gh<sup>wə</sup> (~ kh<sup>wə</sup>), PY \*kVj).
52. PN \*kojHa 'fat; healthy, alive' (OS 168) : SC \*9wVjV 'thick' (PY: Ket. qōj, NC \*<sup>ʔ</sup>V-9wV-).
53. PN \*kojw/a/ 'birch' (OS 170): PY \*x<sup>ʔ</sup>w- 'birch bark'.
54. PN \*koλV 'peel, bark' (OS 171; \*kol-YV in Dolg. Soch. 363): SC \*q'wA<sup>ʔ</sup>HV 'bark, skin' (ST \*qhrōw (~ kh-), PY: Ket. qōl 'dandruff', NC \*q'wa<sup>ʔ</sup>HV 'bark').
55. PN \*kOrí 'lamb, sheep' (OS 174): SC \*k'wAr-NV 'young (of animals), shoot (of plants)' (ST \*kruṇ (~ q-) 'be born; shoot (of a plant)'; NC \*k'warnV 'young (of animals)').
56. PN \*kūjñA 'knee/elbow' (OS 175) : SC \*HgVNV 'knee, leg' (ST \*Koṇ 'thigh, leg', NC \*HgenV 'knee, leg').
57. PN \*kūlā 'lake' (OS 177) : SC \*k'(w)AlHV 'lake, river' (ST \*klū-ṇ 'river', PY \*xɔ'l (~ q-, -r) 'bay, creek', NC \*k'(w)alHV 'lake').
58. PN \*kā/IH/V 'to step, ford' (OS 161) : SC \*gA<sup>ʔ</sup>HV 'step; ford' (ST \*9hāl (~ qh-, kh-, gh-) 'ford'; NC \*ga<sup>ʔ</sup>HV 'step').

59. PN \*kurV 'swallow, throat' (OS 91: \*k- because of IE \*gʷ-) : SC \*k'wVrV 'throat, crop' (ST \*khrōw (~ gh-), PY \*gər-Vʒ (~ k-), NC \*k'wirV (~ -i-)).
60. PN \*küni 'wife, woman' (OS 178) : SC \*qwEnV 'woman' (PY \*qVm- (~ x-), NC \*q(w)änV).
61. PN \*kUṭV 'snake, worm' (OS 179) : SC \*(wHVr)-ḷwVṭV 'snake, worm; leech' (ST \*p-rūl 'snake', PY \*(h)urjol 'leech', NC \*wHVr-ḷwVṭV 'snake, worm').
62. PN \*komtV 'lid (of a receptacle)' (MS 356) : SC \*gVmtV 'a cover, pillow' (ST \*g(h)um, PY \*xot- (~ q-), NC \*gVmtV).
63. PN \*kun-če 'nail, peg' (Dolg. Met. 263; -če is probably a suffix as in \*pArÄ, \*pAr-čV 'finger, nail', q.v.) : SC \*xq'winV id. (PY \*(x)ine 'nail, claw', NC \*Hq'winə 'nail, peg').
64. PN \*KūmTä 'fog, mist' (OS 187) : SC \*k'wVmHV id. (also metathesized \*mHVk'wV : ST \*mūk 'fog', PY: Yug. xoan 'fog', NC \*k'wimHV / \*mHik'wV 'cloud, rain').
65. PN \*KūtV 'bind, tie' (OS 188) : SC \*k'wEtV 'tie, bind; reel' (ST \*kʷāt (~ gʷ-) 'tie, bind' — here rather than to NC \*q'wHart'V-ṭV 'belt' as in Gip. 32; NC \*k'wetV 'reel').
66. PN \*k'acV 'man, young man' (OS 191) : WC \*qac'a 'man'.
67. PN \*k'adV 'interweave (twigs), build' (OS 192) : SC \*q'VmdV 'fence, wall' (ST \*Kat 'fence; room', NC q'ēmdə 'wall').
68. PN \*k'ala 'leave, stay' (OS 194; \*k'al-ya in Dolg. Soch. 358) : NC \*?i-lgwVn- (~ \*?i-gwVl-) 'stay'.
69. PN \*k'ap'V 'vessel, pot; scull' (OS 195) : SC \*qAp'V 'vessel' (OC \*khāp, PY \*qä(?)p (~ -b) 'boat', NC \*qāp'ā 'vessel; boat').
70. PN \*k'ácä 'cut' (OS 196) : SC \*q'ac'V 'cut, divide' (ST \*qāt 'cut, divide', NC \*q'ac'ṭ 'piece, part').
71. PN \*k'ärV 'bind (tightly)' (OS 197) : SC \*-qVrV 'plait, weave' (ST [with metathesis] \*rāk 'plait, weave', NC \*?V-qVr- 'weave').
72. PN \*k'ErdV 'heart, breast' (OS 200) : NC \*kīrV 'breast; belly'.
73. PN \*k'oÍV 'round, roll' (OS 202) : SC \*gwVl(g)V id. (ST \*kʷ(r)eṭ 'roll, wind', NC \*gwēlgV 'round').

74. PN \*k'u<sup>h</sup>la 'secret, steal' (OS 204; \*k'ul/-y/ V in Dolg. Soch. 364): SC \*-gwVIV 'hide, steal' (ST \*kol (~ q-, -j) 'hide', NC \*<sup>h</sup>i-gwVl- 'loose, steal').
75. PN \*k'Ut'V 'small' (OS 205): NC \*k<sup>h</sup>ot'V 'short'.
76. PN \*k'ajwV 'dig' (OS 209): SC \*-xqVwV id. (ST \*gaw, PY \*<sup>h</sup>uk- (~ -g-), NC \*H<sup>h</sup>V-qwV-).
77. PN \*k'aLi 'rise, high' (OS 210): NC \*<sup>h</sup>ə-lqV (?ə-qVIV) id.
78. PN \*k'ap'a 'cover, close' (OS 212): ST \*gāp, 'cover'.
79. PN \*k'ar/ā/ 'black, dark' (OS 213): NC \*k'ərV 'black, coal'.
80. PN \*k'arV 'rock' (OS 216): SC \*g<sup>h</sup>wVrV 'stone' (ST \*Kor, NC \*g<sup>h</sup>wērV).
81. PN \*k'arā 'bark' (OS 217): NC \*k'arī 'bark, shell'.
82. PN \*k'awingV 'armpit' (OS 220): ST \*qhōŋ 'hole, gap'.
83. PN \*k'ā/IH/ā 'tongue, speak' (OS 221): NC \*<sup>h</sup>V-gwVl- 'speak'.
84. PN \*k'āp'ā 'paw, hoof' (OS 222): SC \*<sup>h</sup>wHabV 'paw, leg' (ST \*k(h)ap 'crotch', PY: Ket. qop-ku 'calf (of leg)', NC \*<sup>h</sup>wHabV 'paw').
85. PN \*k'EñU 'empty, light' (OS 226): ST \*khiaŋ (~ gh-) 'light, thin'.
86. PN \*kErV 'horn' (OS 227; \*k- rather than \*k'- because of PK \*kr-): SC \*q<sup>h</sup>wVrHV 'horn' (ST \*Kruā (-ŋ, -k), PY \*<sup>h</sup>ɔ<sup>h</sup>, NC \*q<sup>h</sup>wā(r)HV).
87. PN \*k'urV 'plait, weave, knit' (OS 236): NC \*<sup>h</sup>i-m<sup>h</sup>wVr- 'knit, weave, spin'.
88. PN \*k'ūjnA 'wolf, dog' (OS 238): SC \*<sup>h</sup>wEjV 'dog' (ST \*qh<sup>h</sup>ij, NC \*<sup>h</sup>wē(H)jV).
89. PN \*k'ülā 'kin, community' (OS 239): SC \*(H)l<sup>h</sup>iV<sup>h</sup>V 'root; kin, tribe' (ST \*t-ruat 'village, kin', NC \*Hl<sup>h</sup>iwi<sup>h</sup>V 'root; kin').
90. PN \*k'üp'ā 'boil, foam' (OS 240): PY \*<sup>h</sup>xopVr 'foam'
91. PN \*k'UmV 'swallow, devour' (OS 242): SC \*q'VmV (~ \*<sup>h</sup>g-) 'eat, hold in mouth' (ST \*Kuam 'hold in mouth', NC \*<sup>h</sup>Y-q'Vm- [-<sup>h</sup>g-] 'eat')
92. PN \*k'U/p/a 'heap' (OS 243): NC \*g<sup>h</sup>wəp'V 'group, heap'.
93. PN \*kama (~ k'-) 'husk, shell' (MS 372): SC \*kOnmV 'skin, husk' (ST \*kuam 'husk, shell', NC \*konmo 'skin').

94. PN \*k'uIv 'fall' (OS 235): ST \*klaH 'fall'.
95. PN \*kopV 'bark, rind' (MS 344): ST \*q(r)uap 'rind, shell, scale'.
96. PN \*k'iwIV (~ -Iw-) 'hear, ear' (OS, p.18, MS 366) : NC \*ʔi-IkV (~ \*ʔi-kV1-) 'hear'.
97. PN \*ko(H)IV 'kill, die' (MS 370; \*k- on the basis of PIE \*gʷ-[q'- in PK \*q'wil- is highly irregular]) : SC \*-IqwV (<\*qwVIV) 'die, kill' (PY \*qo- 'die', \*-VqV- 'kill'; (PY \*qo- 'die', \*-VqV- 'kill'; NC \*ʔi-IqwV 'die', \*ʔi-IqwV 'kill').
98. PN \*lak'V 'lick' (OS 247) : ST \*ʕiak 'tongue, lick'.
99. PN \*IulV 'sleep' (MS 367; only Kartvelian with AA parallels): NC \*ʔIēʕa 'night'.
100. PN \*Iuŋge (\*Iuŋe) 'snow' (OS 354): NC \*Hʕwini 'winter'.
101. PN \*Iama 'soften, knead' (OS 254): ST \*luam 'mild, soft'.
102. PN \*t/a/k'a 'leg' (OS 255): SC \*tEkV 'leg' (ST \*IVŋ 'leg, thigh, bone', NC \*təkā 'leg, bone').
103. PN \*Iap'a 'flat' (OS 256; Altaic forms with the meaning 'leaf' should be kept apart, see below): SC \*ʕAp'V 'flat' (ST \*Iēp 'flat, plate, slab', NC \*ʕap'V [-e-, -i-] id.).
104. PN \*Iejna 'soft, weak' (OS 258): ST \*neI id.'
105. PN \*Hiwa 'mud, silt' (OS 259): ST \*Iəj 'mud, slime'.
106. PN \*LaHm/u/ 'marsh, silt, wet' (OS 263): SC \*ʕwHEmV 'wet, liquid' (ST \*li(a)m (~ ʕ-), NC \*ʕwHEmV).
107. PN \*təp'V 'to cover' (MS 356): ST \*Iup id.
108. PN \*IokV 'count, collect' (MS 366) : SC \*-IVk'wV 'recite, read' (ST \*Iök 'read, tell', NC \*ʔi-Ik'wV(n)- 'read, write').
109. PN \*Lam-d/i/ 'low, lowland' (OS 264): SC \*ʕaŋV (ST \*Iaŋ 'lower, down', NC \*ʕaŋā 'lower part, bottom').
110. PN \*L/a/t'V- 'wet, soak' (OS 265): NC \*ʔV-t'V1- (~ \*ʔV-I't'V-) 'to drip, soak'.
111. PN \*L/ä/jV 'water, pour' (OS 267) : ST Iäj 'pour, flow'.
112. PN \*Iajp'V 'leaf' (this root is to be strictly kept apart from PN \*Iap'a 'flat' and \*Lop'V 'to peel') : SC \*ʕApE 'leaf' (ST \*ʕəp (/ \*Iap), PY \*jəpe, NC \*ʕapi)

113. PN \*LopV 'peel, peeled bark (OS 268) : ST \*lep (~ λ-) 'to peel, to slice'.
114. PN \*majrV 'young male' (OS 277): NC \*mīrλV 'male, man'.
115. PN \*manV 'stay, stand still' (OS 287) : NC \*ʔi-ma(n)- 'stay, be' (PL \*ʔi-ma-, HU \*mann-).
116. PN \*m/o/nV, \*m/o/ngV 'many, big' (MS 348, OS 280) : ST \*māŋ 'many, big'.
117. PN \*manu 'think' (OS 281): SC \*nVmHV id. (ST \*ńVm 'think', PY \*ʔa-n/i/ŋ 'think, mind').
118. PN \*marja 'berry' (OS 282): NC \*merHV id.
119. PN \*mALV 'mountain' (OS 286) : SC \*mUHAIV 'mountain, hill' (ST : KC \*muāl; NC \*muʼalV).
120. PN \*mālgi 'breast, milk' (OS 291): NC \*nheλV 'milk'.
121. PN \*mänV 'man, male' (OS 292) : SC \*mVn-xV id. (ST \*nēm 'man, person', PY \*pix- 'man', NC \*mVnxV 'man, male').
122. PN \*mārā 'moisture, liquid' (OS 294): SC \*marλwV 'rain, cloud' (PY \*pVr 'cloud', NC \*marλwV 'rain').
123. PN \*merV 'fat, smear' (OS 296) : ST \*mar 'fat'.
124. PN \*mEwV 'water, moisture' (only IE; Altaic forms should be kept apart. See OS 298) : SC \*HmEHwV id. (ST \*moj, NC \*ħmēħwā 'moisture, liquid, pool').
125. PN \*miñā 'woman, female relative' (OS 301): ST \*nam 'sister-in-law, daughter-in-law'.
126. PN \*moLV 'break, crush' (OS 302): ST \*mial id.
127. PN \*murV 'crush, pound, break' (OS 310): ST \*muar 'bite, gnaw'.
128. PN \*mVtV 'worm' (OS 312): NC \*betV (? \*bemtV) 'worm'.
129. PN \*mVnZV 'luminary' (OS 313: only Kartvelian \*mzje 'sun' is listed (together with AA forms), although it seems highly probable that PIE \*mēn(ə)s- 'moon' also belongs here) : SC \*wVmcV 'moon' (OC \*ŋwat, PY \*ʔVsuj, NC \*wamc'o).
130. PN \*nojmv 'name' (OS 317; Altaic \*nġomV- 'name; spell, tale' should be added): ST \*maiŋ 'name'.
131. PN \*ńamV 'grab, take' (OS 319) : ST \*nVm id.
132. PN \*ńamV 'soft' (OS 195): ST \*nēm id.

133. PN \*ńā/wH/ā 'hair' (OS 322): ST \*nVj id.
134. PN \*ńila 'wet, slippery' (OS 325; cf. also \*ńo/H/LV 'slime' in MS 365): ST \*nāl (~ ń-) 'mud, slime'.
135. PN \*nika 'neck, back of head, vertebra' (OS 330; \*-k- and not \*-k'- on the basis of both Uralic and Altaic reflexes): SC \*nVqwV 'back' (ST \*nuk /-ŋ 'back, spinal vertebra', NC \*naqwV 'back, behind').
136. PN \*purčV/\*pülčV 'flea' (OS 338, with several irregularities): NC \*bēlžwi 'gadfly, wasp'.
137. PN \*mVnV 'miss; be vain, false' (OS 357): ST \*mōn 'dull, blinded, confused'.
138. PN \*palyV 'a fortified dwelling' (OS 368; \*p- on the basis of Altaic forms): SC \*būl'V 'house, home' (ST \*/p/ūk, NC \*būl'V).
139. PN \*/Pa/se 'membrum virile' (OS 371; according to Mudrak, the Eskaleut reflex of this root speaks in favor of \*p-): SC \*bVc'V (PY \*bī's 'penis', PL \*pīc' 'Schamteile').
140. PN \*paíkV 'foot' (OS 361; \*-q- in PK is probably secondary): SC \*bol(V)k'wV 'leg, leg bone' (ST \*phol 'ankle, calf (of leg)'; PY \*bul 'foot, leg', NC \*bolV'k'wo [this comparison seems more likely than that in Gip. 28])
141. PN \*pArā, \*pAr/č/V 'nail, claw, finger' (OS 362): SC \*bArV (~ \*p-) 'claws, paw, cupped hand' (ST \*Par, PY \*pər).
142. PN \*pālgi 'belly, intestines' (reconstructed on the basis of PA \*pāl(V)gi 'belly, intestines' and PIE \*bhelǵh-): SC \*bHEl'V 'intestines' (ST \*Pik, PY \*pī'ī, NC \*bheλ'V).
143. PN \*p'ār/a/ 'split, break' (OS 339): ST \*phraj 'split, divide'.
144. PN \*p'iywV 'fire, heat' (MS 352): SC \*-pVHV (~ b-) 'heat, burn' (ST \*pū (~ b(h)-) 'burn, roast, boil', PY \*(?a)pV- 'heat, hot').
145. PN \*p'erV 'bear, produce' (MS 361): ST \*p(h)ria-ŋ id.
146. PN \*p'unčE '(body) hair' (OS 365): NC \*pen/c'/V 'eyebrows, eyelashes'.
147. PN \*p'AtV 'vessel, receptacle' (MS 366): SC \*pAt'wV id. (ST \*PUt 'a big basket', NC \*pat'V 'vessel').

148. PN \*p<sup>u</sup>lV 'aspen, poplar' (MS 369): SC \*pHV<sup>u</sup>V id. (PY \*(h)ipVl 'aspen', NC \*pH<sup>u</sup>lV 'aspen, poplar').
149. PN \*p<sup>u</sup>t<sup>u</sup>V 'hole, vulva' (MS 340): SC \*pVt<sup>u</sup>V id. (ST: LB \*pytx, NC \*pæt<sup>i</sup>).
150. PN \*p<sup>o</sup>jV 'child' (MS 360): SC \*pUjV (ST \*Poj 'be born, child', PY \*pu<sup>?</sup>- 'child', WC \*pV 'son, daughter').
151. PN \*Pe(n)č<sup>u</sup>V 'pine-tree' (Terentiev 1979:160): SC \*/p/inst<sup>u</sup>wV 'resin' (PY \*pi<sup>t</sup> 'glue', NC \*/p/īnc<sup>u</sup>wV 'resin').
152. PN \*p<sup>a</sup>rV 'fly' (MS 346): SC \*pUrV id. (ST \*phur (/b<sup>h</sup>-), NC \*purV).
153. PN \*p<sup>u</sup>yV 'blow' (MS 339): SC \*pOHwV id. (ST \*bhu(H), PY \*-pV, NC \*pohwV).
154. PN \*p<sup>e</sup>nV 'bitch, female' (MS 366): SC \*pEnHV (~b<sup>-</sup>) 'female' (ST \*p(h)ij 'female', \*p(h)in 'woman', PY \*pāṇ 'female').
155. PN \*p<sup>a</sup>r(H)V 'bee' (MS 358): SC \*pVrV id. (ST \*P/r/aH 'bee', NC \*porV 'bee; butterfly').
156. PN \*p<sup>a</sup>/rj/V 'spread, scatter' (MS 369): ST \*phra id.
157. PN \*p<sup>ä</sup>k<sup>u</sup>V 'hot, heat' (MS 337): SC \*PVgwV id. (OC \*bhāk<sup>w</sup> 'expose to the sun', PY \*bo<sup>?</sup>k 'fire').
158. PN \*p<sup>e</sup>/H/jV 'sickness, sore' (MS 331): ST \*PijH 'scab, head sickness'.
159. PN \*p<sup>a</sup>lV 'many; full' (MS 348): ST \*p-lai-ṇ 'full'.
160. PN \*rúčV (~č<sup>-</sup>) 'destroy, tear, break' (MS 358): SC \*rVč<sup>u</sup>wV id. (ST \*r/a/t, NC \*<sup>?</sup>a-rč<sup>u</sup>wV-).
161. PN \*rV(h)bV 'emotion, agitation' (MS 334; only IE with AA parallels): ST \*rap 'afraid, frighten'.
162. PN \*rowV 'dig, gouge, chop' (MS 362): ST \*ræw 'dig'.
163. PN \*Sa(w)k<sup>u</sup>U 'sap, resin' (MS 366): SC \*śwVnq<sup>u</sup>V 'ink, dye-stuff' (ST \*smāk (/ṇ) 'ink', PY \*suK 'dye, paint', NC \*śwāṇq<sup>i</sup> 'ink, gum').
164. PN \*sVwV 'liquid, drink' (MS 341): SC \*-sdwV 'drink' (PY \*ut-, NC \*<sup>?</sup>Ÿ-3wV-).
165. PN \*sun(g)V 'smell' (MS 342): SC \*sunV id. (ST \*sun, NC \*sunV, \*sun-t<sup>u</sup>V).

166. PN \*sājV 'bile, pus' (MS 336): ST \*chij 'thick liquid'.
167. PN \*śalV 'willow' (MS 343; it would be better to reconstruct \*ča(w)IV on the basis of PA \*čual/i/ 'willow, branch'): NC \*č'wHeli 'willow'.
168. PN \*śulV 'glowing coals' (MS 370; \*žulȳV in Dolg. Soch. 361): ST \*s-γūl id.
169. PN \*sVxV /\*ʔVsxV 'blood' (MS 345, PIE-PK; one should probably add PA \*sagV 'blood; health'): SC \*sVHwV 'soul, breath' (ST \*suā 'breathe, live', PY \*duʔ(x) 'smoke', NC \*sɟwV 'soul, breath').
170. PN \*šarV 'flow, stream, lake' (MS 369): SC \*šOrV id. (ST \*šur 'flow, pour', NC \*šorV 'lake, river').
171. PN \*š/E/wV 'bear, produce' (MS 361): SC \*š(V)wV 'bear; son, offspring' (ST \*šū 'grandchild, descendant', NC \*-ɬšwV 'bear; son, daughter').
172. PN \*šingV 'snow' (MS 366): ST \*šəŋ 'hoar-frost, cold'.
173. PN \*šVλmV 'heart' (MS 364): SC \*SiMV id. (ST \*siam, PY \*sin(V)b-).
174. PN \*/ś/ajrV 'nit, louse' (MS 336): SC \*šErV 'louse; worm, helminth' (ST \*šar 'louse', NC \*š/i/rV 'worm, helminth'). There exists also a variant with a suffixed velar both in Nostratic (cf. PA \*sir-kā, PU \*śa(j)r-kV) and Sino-Caucasian (cf. ST \*šrik, NC \*šir-kV).
175. PN \*tākV 'touch' (MS 369): ST \*t(h)ok id.
176. PN \*tel(h)V 'long, stretch' (MS 339): ST \*dhel 'spread, stretch'.
177. PN \*ter(H)V 'tear' (MS 360): NC \*ʔV-t'wVr- id.
178. PN \*talV 'shake' (MS 369): ST \*tōl id.
179. PN \*to/H/V 'give' (MS 338): NC \*ʔV-t(w)V- id.
180. PN \*tuʔV 'two' (MS 338): SC \*(t')q'wE id. (PNC \*(t')q'wE. In ST and PY the original root obtained a nasal suffix and lost the dental element of the initial cluster: ST \*k-nij(s), PY \*xi-na).
181. PN \*t'anV, \*t'angV 'stretch, extend' (MS 370): ST \*taŋ (~ d-) id.
182. PN \*t'anV 'chop, cut off' (MS 352): ST \*tan id.
183. PN \*tarV 'bald' (MS 347): ST \*ter (~ d-) 'bald, bare'.



184. PN \*t'ap'h/a/ 'beat' (OS 349): ST \*dhVp id.
185. PN \*t'ājV 'louse' (MS 335): NC \*t'ah-nā 'nit'.
186. PN \*t'āpV 'warm, heat' (MS 338): ST \*tap 'fire-place, stove'.
187. PN \*t'umV 'dark' (MS 368): SC \*dwVmV 'dark, black' (ST \*tVm 'dark', PY \*tum- 'black').
188. PN \*t'unKV 'lower part of trunk, stump' (MS 344): SC \*dwV(n)q'V 'trunk, beam, piece of timber' (ST \*tūŋ (~ d-); NC \*dwiq'V).
189. PN \*t'urV 'swift, hurry' (MS 332): SC \*t'UrV 'run, hurry' (ST \*t(h)ur, NC \*ʔV-t'Vr-).
190. PN \*t'/o/gV 'fire' (MS 337: PT \*toga – PU \*tä/y/V(t) 'fire'; PIE \*dhegwh- 'burn' should rather be compared with PA \*dakV- 'burn'): SC \*tVKwV 'burn, glow, kindle' (ST \*/dh/ekw id., PY \*dVk- [~ -g-] 'light, candle').
191. PN \*t'Vk'U 'flow, pour' (MS 347): SC \*t'HEK'V 'drop, drip' (ST \*tēk (~ d-), NC \*t'Hänk'V ~ \*t'Häk'V-nV 'drop').
192. PN \*t'Vk'V 'plait, weave' (MS 354): ST \*tak 'weave'.
193. PN \*t'VrpV 'be satiated' (Sootv. 317): SC \*tV(r)p'V (-b-) 'eat, taste' (ST \*thVp, PY \*dVbV).
194. PN \*t'ap'V 'hit (an aim), pass; guess' (MS 356): SC \*dwVp'V (~ -b-) (ST \*tuap 'pass, fit; answer'; PY \*tVb- 'ask').
195. PN \*t'al/H/V 'flat, level' (MS 355): ST \*thāt (~ \*d-) id.
196. PN \*/t'/ajlV 'stone' (MS 343): NC \*λ'ałV 'stone, rock'.
197. PN \*t'ālV 'young (of animals)' (MS 359): NC \*λ'āthē 'lamb'.
198. PN \*TuHlV 'net, catch with a net': ST \*t(h)ol (~ -ł) 'net'.
199. PN \*gūlV 'house, dwelling' (MS 341): SC \*λwVłV 'hedge, fence' (ST \*ral, NC \*λwəłV).
200. PN \*/a/pV 'lick' (MS 347; only PIE with AA parallels): SC \*λ'VpV (~ -b-) 'tongue' (ST \*λep; PY \*ʔalVp; Hatt. alip).
201. PN \*warV 'burn' (MS 341): ST \*war id.
202. PN \*welV 'kill, die' (MS 367: SC \*(wV) λ'V- id. (OC \*λij 'corpse'. NC \*ʔi-wλ'V- 'kill, die').
203. PN \*wetV 'water' (MS 334): SC \*-t'wV 'water, pour' (ST \*tuj 'water', NC \*ʔV-t'wV 'be wet, soak, pour').
204. PN \*wiłV 'wet, soak' (MS 333): SC \*λwV 'flow; drink' (ST \*luj 'flow, water': NC \*ʔV-λwV 'drink').

205. PN \*wojV 'swim' (MS 355): ST \*jəw/\*wəw 'float, swim'.  
 206. PN \*xantV 'front' (MS 354): SC \*HendwV 'forehead' (ST [with metathesis] \*thjīn, NC \*ʔendū).  
 207. PN \*xot'i 'burn, fire' (OS 343): PY \*xot- id.  
 208. PN \*śVnV (~ ś-) 'year; old' (MS 337; \*ʒUnE in Dolg. Affr. 167): SC \*swEnV id. (ST \*s-nī-ŋ id., PY \*sin- 'old', \*si(n)-ga 'year', NC \*swän(H)i 'year').  
 209. PN \*zeɣV 'eat' (MS 340): SC \*ʒVHV (~ \*c-) 'eat, drink' (ST \*ʒhaH 'eat', PY \*si9- id. NC \*ʒaHV (~ \*c-) 'drink').  
 210. PN \*zalV 'conceal; cunning, treacherous' (MS 368): SC \*ʒVtV (~ \*ć-) 'bad, mischief' (ST \*cuat (~ \*č-) 'to plan mischief', PY \*sel- (~ -r-) 'bad').  
 211. PN \*ʒAhrV 'moon' (Dolg. Affr. 165; PIE \*(Ha)ster- 'star' probably should be added): SC \*ʒwArHV 'star' (OC \*sēŋ, NC \*ʒwHārʕi).  
 212. PN \*ʒiNV 'night, spend a night' (Dolg. Affr. 167): SC \*HćwInV 'night' (ST \*chen (~ s-) 'night, darkness', PY \*si(n)-9 'night', NC \*HćwīnV (/ \*HnīćwV) 'night, dream').  
 213. PN \*ʒULE 'trunk, tree' (Dolg. Affr. 170): SC \*c'(w)VtV 'tree' (ST \*Cəl 'wood, forest', NC \*c'ətV 'tree, stick' (or \*c'wHhV id.))

#### PRONOUNS AND PARTICLES

1. PN \*mi (\*mV) 'I': SC \*ŋV (ST \*ŋā (\*ŋV), PY \*b-, NC \*nV (/ \*mV)).
2. PN \*mä 'prohibitive particle': SC \*mV id. (ST \*ma, PY \*wə-, NC \*mV).
3. PN \*mu 'this, that': SC \*mV id. (PY \*wV, NC \*mV).
4. PN \*mi 'what': SC \*mI id. (PY \*wi/\*we-, NC \*mV).
5. PN \*t'ä 'this, that': SC \*tV id. (PY \*dV, NC \*tV). Cf. also SC \*dV 'demonstrative pronoun' (ST \*t, \*te, PY \*t/u/-, NC \*dV-ʕV).
6. PN \*ʔi/\*ʔe 'this': SC \*ʔi (ST \*ʔi, NC \*ʔi).
7. PN \*ʔa 'that': SC \*ʔa (ST \*ʔa, NC \*ʔa).
8. PN \*šä 'a demonstrative pronoun': SC \*šV id. (ST \*še, \*ši-ŋ, PY: Ket. śī-ŋ śū-ŋ, NC \*šV).

9. PN \*k'a/\*k'o 'who' : SC \*xV 'who, what' (ST \*qhā, NC \*xY).
10. PN \*da 'a locative particle' : NC \*-dV id.
11. PN \*e 'a negative particle' : NC \*(w)V id.
12. PN \*ja 'which, what' : SC \*jV 'an interrogative particle' (PY: Ket. aj 'what', NC \*jV interrogative particle').
13. PN \*-jV 'a diminutive suffix' : NC \*-jV id.
14. PN \*-j(V) 'a plural particle' : NC \*-jV id.
15. PN \*-k'a 'a diminutive suffix' : NC \*-k'V id.
16. PN \*k'/o/ 'a postpositive emphatic particle' : NC \*kYj id.
17. PN \*k'V 'a directive particle' : SC \*-kV id. (PY \*-ga, NC \*-kY).
18. PN \*-l/a/ 'a collective suffix' : NC \*-lV 'a plural suffix'.
19. PN \*tA 'a locative particle' : NC \*-tY id.
20. PN \*-nV 'oblique noun-form suffix' : SC \*-nV id. (PY \*-n-, NC \*-nV).
21. PN \*NA 'a demonstrative pronoun' : NC \*nV 'this, that'.
22. PN \*-NA 'a plural suffix' : SC \*-nV id. (ST \*-n 'a collective suffix', PY \*-n(V), NC \*nV).

#### ABBREVIATIONS

AA	— Afro-Asiatic		
HU	— Hurri-Urartean		
LB	— Lolo-Burman		
OC	— Old Chinese	Dolg. Affr.	— Dolgopolsky 1974
NC	— North Caucasian	Dolg. Met.	— Dolgopolsky 1965
PA	— Proto-Altaic	Dolg. Soch.	— Dolgopolsky 1972
PIE	— Proto-Indo-European	Gip.	— Starostin 1984
PK	— Proto-Kartvelian	MS	— Illich-Svitych 1967
PL	— Proto-Lezghian	OS	— Illich-Svitych 1971-
PN	— Proto-Nostratic	Sootv.	— Illich-Svitych 1968
PU	— Proto-Uralic		
PY	— Proto-Yeniseian		
SC	— Sino-Caucasian		
ST	— Sino-Tibetan		
WC	— West Caucasian		

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GILYAK AND CHUKCHI-KAMCHATKAN  
AS ALMOSAN-KERESIOUAN LANGUAGES:  
LEXICAL EVIDENCE

(PRELIMINARY REPORT)

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Joseph Greenberg has convincingly demonstrated the existence of a language family which he has named Almosan-Keresiouan. It includes Algic, Salish, Chemacuan, Wakashan, and Kutenai; also Caddoan, Iroquois, Siouan-Yuchi, and Keresan (Greenberg 1987:163-5). In northeast Asia there exist the so-called Paleoasiatic language families and separate languages (Eskimo-Aleut, Chukchi-Kamchatkan, isolated Gilyak and Yukaghir), which are not genetically related; they are connected only by their genetic isolation from all of the world's other languages.

At present we are assuming that Eskimo-Aleut is genetically affiliated with the Nostratic macrofamily (and within this macrofamily, they are most closely affiliated with Altaic; compare Mudrak 1984). Yukaghir, apparently, is also a Nostratic language, and is most closely related to Uralic, forming with it the 'Macro-Uralic' branch (compare, for example Collinder, 1940 and 1957)

On the other hand, attempts to make an external comparison of Chukchi-Kamchatkan and Gilyak (= Nivkh) have so far been unsuccessful. Golovastikov and Dolgopolsky (1972) attempted to prove that Chukchi-Kamchatkan is affiliated with Nostratic, but their results were not convincing, mainly because Proto-Chukchi-Kamchatkan had not been reconstructed. (A Proto-Chukchian reconstruction was made by Murav'ëva; compare Murav'ëva 1986. The following PCh forms are cited according to her reconstruction, with some modifications introduced by Mudrak). Attempts to compare Chukchi-Kamchatkan and other languages may also be considered to have been unsuccessful.

Thus far, for the languages of North America only typological similarities have been noted (see Bogoraz 1934, p. 7).

For the isolated Gilyak language no cognate languages have been discovered, although various attempts have been made to link Gilyak both with Chukchi-Kamchatkan (Tailleur 1960) and American Indian languages (Sternberg 1904).

In his paper at the conference *Linguistic Reconstruction and Prehistory of the East* (Moscow 1984) Nikolaev presented a small list of Algonquian-Gilyak lexical similarities. Following Mudrak's reconstruction of Proto-Chukchi-Kamchatkan, a large number of lexical and morphological parallels have been found between Gilyak and Chukchi-Kamchatkan.

Below we give a partial list of lexical coincidences between Chukchi-Kamchatkan and Gilyak, as well as between Algic and Salish, which represent here the Almosan-Keresiouan group. These similarities convince us that Chukchi-Kamchatkan has a genetic affiliation with Gilyak, as well as with Almosan-Keresiouan. Further, these similarities allow us to include Chukchi-Kamchatkan and Gilyak in this language group. We will give a list of lexical parallels between these two languages in a separate publication.

This report can only be a preliminary one, mostly since there are no reliable reconstructions for Algic and Salish (as well as for some others, including Wakashan and Caddoan). Whether to include Chukchi-Kamchatkan and Gilyak in the Almosan-Keresiouan group can be determined only after having made stepwise reconstructions for the proto-languages of all subgroups. Until such time, regular phonetic correspondences between them cannot be established.

Sources in the paper are as follows: Proto-Chukchi-Kamchatkan reconstructions are cited according to Mudrak 1989; Kamchadal forms are cited according to Volodin 1976, Gilyak according to Savel'eva & Taksami 1970; Yurok forms according to Robins 1958; Salish as in Dale Kinkade 1981 (Moses-Columbian), Drachman 1969 (Twana), Laurence-Terry Thompson 1971 (Clallam), Kuipers 1967 and 1974 (Squamish, Shuswap, Kalispel, etc.); Proto-Central Algonquian, Proto-Central-Eastern Algonquian, and Proto-Algonquian forms taken from Bl 25, 46; Ge 41; Go 65, 67a, 71; Ha 58, 67a, 67c; He 73; Mc 35b; Sb 41, 67a, 67b; Sl 60; and Vo 41 are cited according to Aubin 1975.

Note: Please pay attention to this significant type of sound correspondence: PChK t, θ : Gil č(h) : AR k (č) : Sal x, k, X, see examples 42, 84, 106, 113, 125, 157.

1. ARM, ARMPIT. Gil tɪmk 'arm, hand'. AR: PA \*-θenkwe- (Mc 35b.136) 'armpit'.
2. BACK. Gil poku 'hump'. AR: PA \*ne-xpeθkwani (Sb 41.300) 'my back', \*-peθkwane- (Mc 35b. 157) 'back'.
3. BACK, BACKBONE. PCh \*θilæqə 'backbone'. Gil η-iski 'backbone; mountain ridge', čuk 'mountain ridge'. AR: PA \*-tatakāw-an-a-k-i (Mc 35b. 152) 'spine'. Salish: Sq s-cəq-ápsm 'back of neck', cq-al-ačn 'lie on one's back', Kal cqal 'lie down on the back'.
4. BAD. PChK \*kiθXV- 'bad'. AR: PA \*kiHSāt- (HS=hs, 's, hθ, 'θ, \*hl, 'ʔl) (Ho 57.261) 'trouble, bad, sorry'. Salish: Cw qəl 'bad', Tw qəlób / qələb 'bad'.
5. BARK (of tree). PChK \*ʔilqə 'bark'. Gil hatx 'cover, shell, rind, peel'. AR: PA \*walakēθkwa (Sb 41.299) 'bark'.
6. BEAR (n.) PChK \*mečwe 'brown bear'. Gil molk 'bear sp.' AR: PA \*maθkwa (Sb 67a.21) 'bear'; W(Ha) βokw 'id.'; ? Y nikwec 'grizzly bear'. Salish: Sq, ColM mɪXa 'black bear'. Cf. Gr AK 15.
- ? 7. BEAR, BEAVER. PCh \*ümqa 'white bear'. AR: PA \*ameθkwa (Sb 67a.25) 'beaver' (cf. semantic correspondence: Sh t'emt 'beaver', ColM stəm'tám'əl 'grizzly bear').
8. BELLY. PChK \*qaylV 'belly'. Salish: Sq k'wəl? 'stomach', Cw k'wəl'ə 'belly'.
9. BIG. PChK \*pelqə- 'big'. Gil pil- 'id.'. AR: Y pel- 'id.'.
10. BLACK. PChK \*kvətxV- 'black'. AR: PA \*kaθk- (Ho 57.254) 'black'.

11. BLOOD. PChK \*məlmV- ( < \*məlvə-) 'blood'. AR: PCA \*meskwi (Bl 25.141) 'id.'; W(Pr) wətkəʔwik 'id.'. Salish: ColM mól-t 'blood-stained', mətk'áyaʔ 'blood', Sh mítk'ye 'blood'.
12. BLOOD, RED. Gil pay- 'red'. AR: Y pekoy(e)k 'blood', pekoy- 'red'; PA \*nepek- / \*nípek- (Pr) 'blood'.
13. BLOOD, RED. PChK \*ʔšəlxə 'red'. Gil čhoX 'blood'. AR: W(Gr AK 156) say- 'red'. Salish: Sh ciqʷ 'red', cʔibʷ 'to bleed', Sq caqʷ 'to bleed', Tw ʔas-c'éq 'red'.
14. BOAT. PChK \*Xətvə 'boat'. AR: PA \*-əθ- (Bl 25.139, Pr) 'canoe'; Y (ʔ)oc 'boat'. Salish: Tw ʔoʔótXs 'ocean-canoe', Sq wítaX 'type of canoe'.
15. BONE. PChK \*-ʔqəl 'humerus, thigh-bone, rib-bone'. AR: PA \*waθkani (Sb 41.299) 'bone'; W(T) watkadót 'id.'; Y (ʔ)wətkəʔ 'bone'.
16. BREAST. PChK \*ʔəvlə 'breast, chest'. AR: PCEA \*nōn- (Sl 60.236) 'suckle'; W(Ha) -ṛunoč- 'id.'; Y newon 'breast; milk', newonoc- 'suckle'. Salish: Sq s-ʔíl-inas 'chest', Ms s-ʔíl-əs 'id.'
17. BREATHE, WIND. PChK \*ʔvəl / \*jvəl 'wind'. Gil la 'id.'. AR: Y rōwos- 'to smoke a pipe', -rōʔ 'pipe', rō-kʷ 'wind'; PA lōweʔθ-, \*lōyew- 'to blow, to blow on' (Pr). Salish: Sh s-new-t 'wind', CdA niw' 'wind blows', Kal néʔu 'to blow'.
18. BURN (tr.) PChK \*uyi- 'burn'. Gil ugu- 'set fire, set on fire' (formally caus. from u- 'burn [itr.]). Salish: Sh yeqʷ- 'light, burn', c-yeqʷ 'fire, lighted; firewood', Sq yəqʷ-, (h)iʔqʷ- 'fire'.
19. BURN (itr.), LIGHT. PChK \*piŋəj- 'burn (itr), light'. Gil plaju- 'shine, glitter'. AR: PA \*pesk-alē- (Ge 41.305) 'fire blazes up'. Other AK cognates see in Gr AK 72.
20. CARRY (ON BACK). Gil yin-//hin- 'carry on back'. AR: PA \*nay- 'carry on back' (Pr); Y negem- (2nd pers. imper. neʔgec-) 'take, carry (a load)'.
- ? 21. CAT. Gil kʰisk 'cat'. AR: PA \*kāšakēnsa (Ho 57.255).



22. CHARCOAL, BLACK. PChK \*vəlqə- 'black; charcoal (PCh \*vułqə- 'darkness, evening', \*vəlqə 'charcoal'). Gil vəlqə- 'black'. AR: W(T) waròg 'coals'; Y lo'og 'embers, coals', lo'ogey- 'to be black, to be dark-colored'. Cf. Gr AK 165.
23. CHILD, MAN. PChK \*ʔxola 'child (m.)'. Gil oyla, GilS eyl-ŋ 'child, son'. PCA \*ileniwa 'man' (Bl 25.135), PA \*ileniwaki 'men' (Mc 35b.155). Salish: Sh s-Xélwe, Kal s-Xéluiʔ, ColM s-Xálwiʔ 'husband'.
24. COME. PChK \*pkəθov- 'come'. Gil phrí- 'come, arrive'. Salish: Sh pút'-m 'come out of the bush, emerge from the wood'; CdA p'ut' 'come to the end'; Kal. púl'əm 'arrive at the end of stg.'; Sq p'əs 'to land, to go to shore; CdA paʔas 'come to surface'. PCA \*py- (Bl 46.120), \*pyā- (Bl 46. 110), \*pyēt- (Bl 46.122), \*pyēθ- (Bl 46.122) 'come'.
25. COOK. PChK \*ʔəpaŋ- 'to cook'. Gil phingaj- 'id.'. PAR: W puw- 'id.'; Y pem- 'to cook', peyaʔr 'to cook over an open fire'; PA \*apwāni (Go 65.210) 'to roast', \*apwāna (ibid.) 'bread'. Salish: Sh p'ix-m 'fry; brand (cattle)'.
26. CRADLE. Gil čaq 'cradle'. AR: PA \*tehkinākani (Go 65. 218) 'cradleboard'.
27. CUT. PChK \*ʔaxt- 'cut, slit'. Gil yit-//hit- 'dissect, slit'. Salish: Sh xʷit'- 'cut up, cut out', Kal xʷl- 'whittle'.
28. DANCE. PChK \*məʔla- 'to dance'. AR: PCA \*nīmyiwa (Bl 46.109) 'id.'. Salish: Sq mīʔaʔ '(Indian) dance; to dance', Cw mīʔ 'winter dance'.
29. DAY. PChK \*θXalvV 'day'. Salish: Sq s-kʷáyl 'daylight', day', Wn s-kʷéyəl 'day', Tw ʔas-kʷólʔ 'sunshine'. AR: PA \*Kīš- 'day, sky' (Ha 67a.63), W(T) kač'hóhy 'daytime'; Y kecoy- 'to be daylight', kecol 'day'.
30. DAY. Gil muyv 'day'. AR: PA \*wāxkam- (Go 71.141) 'bright, clear; day'. Salish: Sq nuqʷ 'noontime', s-néqʷ 'noontime', s-néqʷ-m 'sun'.
31. DEER. Gil thoX 'elk'. AR: W(Ha) hołakw 'caribou'; PCA \*atehkwa (Bl 46.105) 'id.'. Salish: Cl s-tiqíwʔ, Tw s-teqéw 'horse'.

32. DEER. PChK \*qorə 'caribou'. Salish: Tw s-q'q'ále 'elk'.
33. DEER. PCh \*Łəmna (Ł < PChK \*l, \*t, \*č \*š) 'male deer'. Gil čholni, GilS tľani 'deer'. Salish: Kal, ColM s-cúťəm 'bull'.
34. DISH, SCOOP. PChK \*ʔəmlək 'scoop'. AR: PA \*welākani (Vo 41.146) 'dish, bowl'.
35. DOG. PChK \*lXeymV 'puppy'. Gil qan 'dog'. Salish: Sq s-qʷmáýʔ, Cw, s-qʷmécý, Tw s-qʷəbáyʔ s-qʷbáʔe 'dog'.
36. DOG PChK \*XəśXə 'dog'. Gil qaX 'lead dog (in a team)' Salish: Sh s-qeXe, Cl s-qéXəʔ 'dog'.
- ? 37. DOG / SEAL. Gil laŋ-r 'seal'. AR: PCA \*aθemwa (Bl 41.293) 'dog', PA \*aθemwehsa (He 73.157) 'id.'.
38. DRINK. PChK \*ʔiml- 'to drink'. AR: W(T) badoč- 'to drink' Y menokʷolum- 'to gulp down'; PCA \*menwa (Bl 46.98) 'he drinks (it)'.
39. DRY. PChK \*ʔkərx- 'dry'. AR: PA \*kāhk- (Go 65.215) 'dry', \*kāsk- (Ho 57.255) 'id.'. Salish: Sh q'ix-t 'strong, hard, tough', CdA q'eX 'be frugal, grudging'.
- 40 DRY. PCh \*pəba- 'dry (v.), be thirsty'. AR: PA \*pānkʷ- 'dry'.
41. DUST. PChK \*piŋpiŋ 'ashes'; Gil phlŋŋy 'id. soot'. Salish: Sq pəkʷ 'form puffs or clouds of dust, smoke, spray', Cw s-pkʷəm 'dust'; AR: Y penkʷ 'acorn flour', \*penkʷ-eł- 'to be eaten hollow by bugs', PA \*penkwi 'ashes, powder' (Ge 41.306).
42. EAGLE. PChK \*θilmə 'eagle'. Gil čham 'id.'. AR: PA \*keliwa (Ho 57.256) 'id.', \*kenliwa (Pr); W(Ha) koʷwal-iť 'hawk'; Y knūu 'hawk'.
43. EAGLE, HAWK. PChK \*pʔəłqV (~ pX-) 'sea eagle'. Gil phisk 'kite (bird)'. PCEA \*piśwka / \*peškwa (Sb 67a.16) 'night-hawk'. Salish: Sh s-piqʷ, Sq, Cw piqʷ 'nighthawk'.
44. EAR. PChK \*vilvi- 'ear', \*valV-mjV- 'hear'. Salish: Sq qʷól-aʔn, Cw qʷInʔ, Ch qʷéwəl, Tw qʷəlláde(h) 'ear'.

45. EAT. PChK \*ʔnu- 'to eat'. Gil iń-//ńi- 'id.'. PCA \*-am (Bl 46.113) 'by mouth, eat, bite', \*amw- (Bl 46.110) 'eat'. Salish: Sh mt-əs 'feed', CdA æm(-t) 'share food', Kal ʔemʔ 'to feed', ColM ʔəmt-ən 'to feed'. Cf. Gr AK 59.
46. ELBOW. Gil toŋk 'elbow'. AR: PA \*ne-toškwani (Mc 35b.137) 'my elbow'; W(Ha) βatuk 'elbow', cukr- 'do with elbow'; also PA \*-htōškwani (Ge 41.309) 'elbow'.
47. EYE. PChK \*ʔləla 'eye'. Gil nax 'eye', ni-saX 'tears' (-saX 'water'). AR: W(T) balid 'eye'; Y -lin 'id.'. Salish: Sq qlúmʔ 'eye', Cw qáləm 'id.'. Cl qáyəŋʔ 'id.'.
48. FACE. Gil ŋ-ińk 'face, muzzle'. AR: PA \*-inkw- (He 73.154) 'face, look'.
49. FAT PChK \*qwalqwa(l) 'fat, grease'. AR: PA \*wilenwi (Mc 35b.164) 'fat'; Y wel 'fat' (noun).
50. FAT. PChK \*ʔməθqə 'fat'. Gil ŋoX 'fat'. AR: PA \*mak- (Ha 58.246) 'grease'.
51. FEAR. ? PChK \*wečV- 'to fear'. Gil iylu-//kʰlu-//xlu- 'to fear'. AR: PA \*kwēʔəwa (Sl 60.118) 'he fears him', PCA \*koʔθ- (Bl 46.112) 'fear', \*koʔtāčiwa (Ho 57.265) 'he is afraid'; Y ʔekweyþel- 'to be afraid'. See Gr AK 66.
52. FEATHER. PCh \*tiŋb- 'feather'. ? Gil tup-r / tʰup-r 'feather, down'. Salish: Sh t'emn 'feather, fur, animal hair', Tw t'abéd 'hair'.
53. FIN, ARM. K č'ukč'uk, č'xi- 'fin'. Gil ŋi-sk 'id.'. Salish: CdA s-cugʷ-áXən, Kal s-čuw-áXən 'arm'. Other AK corresp. see Gr AK 94.
54. FINGER. PCh \*beθ- 'thumb'. AR: Blackfoot -kic- 'finger'; W kisan 'hand'; Y -ketew 'little finger' (Gr AK 93). Salish: ? Twana s-sq'áče(h) 'finger'. Cf. Gr AK 93.
55. FISH. PChK \*ʔənčV 'fish'. Gil čho 'id.'. PA \*wāhsiwa, \*wāhsehsiwa (Sb 67a.36) 'brown bullhead, eastern catfish, horned pout'.

56. FISH. K keʔkʷ 'salmon sp.'. Gil kʰix 'sturgeon sp.'. Salish: Sq s-qiwʔX, Ms qéʔwX, Ch qáwəX 'steelhead'.
57. FISH, SALMON. PCh \*θəkan 'salmon sp.'. AR: Cree atikk-amək 'poisson blanc'. Salish: Sq s-c'úqwiʔ 'fish (generic)', Cw s-c'áqwəyʔ 'spring salmon'. Gil: tuki 'sturgeon'.
58. FISH. Gil nemla 'fish sp. (kind of salmon)'. AR: PCA \*namē- (Bl 46.119) 'fish'; Y nepeʔwiš 'fish', nepuy 'salmon', nunepew / nune puh / nune puy 'fish; food'.
59. FISH EGG. PChK \*ʔilq 'soft-roe, milt'. ? Gil ŋ-oyeq 'egg'. Salish: Sh ʔekʷn 'fish roe', CdA íkʷul 'id.', ColM ʔákʷəl, ʔákʷən 'fish egg'.
60. FISH-HOOK. Gil kʰerqŋa 'seal-hook'. AR: PA \*mekeskani (/ \*keskani) (Sb 67b.49) 'fish-hook'.
61. FLOAT. PChK \*vxi- 'float, swim'. Salish: Sq p'akʷ 'float', Cw s-p'ə-p'ékʷ 'id.', BC p'ixla- 'id.'. Other AK correspondences see Gr AK 77.
62. FOAM. Gil poft-r 'foam'. AR: PA \*piʔtəwi (Mc 35b.169) 'froth, foam'. Salish: Sq p'úqʷam 'to foam', Cw sp'áqʷam 'foam'.
63. FOOT. PChK \*xəčka 'foot'. Gil ŋ-ičx, GilS ŋ-ačx 'foot, leg'. AR: W(T) bačkóč 'leg'; Y -ckah 'foot'. me-ck-en- 'to be so many feet long'; PA \*me-xkātali (Mc 35b.134) 'somebody's feet, legs', \*me-xkāti (ibid.) 'somebody's leg', Fox -ska- 'with the foot'. Cf Gr Ak 113.
64. FOOTWEAR. Gil momsq 'women's foot-gear (leathern)'. AR: PCA \*maxkesini (Bl 46.106) 'moccasin'.
65. FOX, SKUNK PChK \*šiqpukV 'polar fox'. Gil čʰoŋsq 'mink'. AR: \*šekākwa / \*šekānkwa(?) (Ha 58.251) 'skunk'. Salish: Cw spápq-č'aʔ 'ermine', M spápq-č'aʔ 'weasel (winter)'.
66. FOX. Gil kʰeq 'fox'. Salish: Sh Xʷbʷeɪmx, CdA s-Xʷeɪʷ, M s-XʷáɪʷXʷbʷ 'fox'. PChK \*kəθxəm 'polar fox'.
67. FUR. PCh \*iʷə-t- 'beard, moustache'. Gil ɸ 'id.'. AR: Cree -ipiw-ay(a) 'le poil'. Salish: Sh wup (root) 'hair, fur, weeds', Kal up 'hair on the body; grass', ColM s-wəp-cín 'beard'.

68. GHOST, SHAMAN. PChK \*niŋvit 'soul, god'. AR: PCA \*manetōwa (Bl 25.132) 'manitou'. Salish: Sh s-neʔm 'spirit power', Sq s-naʔm 'power possessed by medicine-man'. Pug txʷ-dáʔab 'shaman, shaman's power'.
69. GO. K xum- 'go out'. Gil qama- 'run (ab. men)'. Salish: Sh c-kʷúme 'to come out of the water'. Sq kʷumʔ 'go up, go ashore'.
70. GO, RUN. PCh t(b)æ- 'go, move'. GilS tloi- (tl < \*čl-) 'run (of men)'. Salish: Sh kɪ-, kɪ- 'come off, come apart, be released', CdA čet 'separate, divorce, part'.
71. GOOSE, DUCK. PCh gaŋe 'duck'. AR: Y kelok 'goose'; PA \*wāpi-kilāhkwa 'snow goose' (Pr). Salish: Sq s-kʷl-kʷál-c 'loon; long-necked diver'.
72. GUTS. PChK \*jixəjV 'guts'. Gil ŋ-iu-s 'gut'. AR: Y -yah 'stomach'; PCA \*w-iyawi (Bl 46.86) 'his body', PA \*w-iyawehsi (Ha 67c.143) 'meat, flesh'. Other AK corres. see Gr AK 27.
73. HAND, FINGER. PChK \*šilx(w)ə 'finger'. Gil čhɪlm 'palm'. AR: W(T) -ahšon 'arm'; Y -sen 'id.'; PA \*-θenčyē (Sl 60.118) 'finger, hand'.
74. HEAD. PChK \*kə-čʔi 'head', \*čwə-šx 'hair' (lit. 'fur of head'). Gil thɪx, GilS thax 'forehead'. AR: PA \*me-štekwāni (Mc 35b.144) 'somebody's head'; Y təkun, -tə 'head of fish'. Other corres. see Gr AK 96.
75. HEAD. Gil čon-r 'head'. AR W(T) watbát 'head'; AR PA \*-tempē- (Mc 35b.145), \*netempi (Mc 35b.142) 'my brain', \*-temp- (Pr) 'head'.
76. HEAD, HAIR. K k'im 'hair'. Gil hemi 'temple'. Salish: Cl s-q'wúŋiʔ 'head', M q'wúm-qən 'id.', Sq s-q'wúmayʔ 'hair (on head)'.
77. HEAR. PChK \*valV-mjV-'hear' (\*valV- 'ear'). Gil mɪ- 'listen'.
78. HEEL. PChK \*ʔəkje- 'sole; heel'. Gil ŋgi 'id.'. AR: Cree m-akkwan(a) 'heel' (PA \*-nkw- ~ \*-skw- ~ \*-hkw-).

79. HIP, THIGH. Gil čhińx 'shin'. AR: Y toʻ 'hip (body p.)'; PA \*oθōkani (Mc 35b.154) 'his, her hip'. Salish: Sh s-cʷ-xen 'thigh hindquarter', M s-cʷúʔ-xən 'foot, leg'.
80. HOUSE, CAMP. PCh \*nəm- 'camp, settlement'. Salish: Sq lamʔ Cw léləmʔ 'house'.
81. I. PChK xə-mə 'I' (< \*xə-ηə, cf. Esk borrowing). Gil ní 'I', n- '1st ps sg (pref.)'. PAR \*ne-: PA \*ne- 'first person prefix', \*ne-t- 'I' (Mc 35b.147); W(T) du- '1st person pronominal prefix'; Y (?)ne- '1st pers. pronom. pref. Salish: Cl n(ə)- 'my', Sq (?)n- 'possess. pref. 1st pers. sg.', -n 'subj. suff. 1st pers. sg.' etc. See Gr p. 54.
82. ICE. PChK \*xələ 'ice'. Salish: Sh s-xʷuy-nt, ColM sxʷúyntk 'ice'.
83. INTERROGATIVE PRONOUN. PChK \*(m)əŋqV 'what'. Gil aŋ 'who'. AR: PCA \*awēn- (Bl 46.116) 'who is it'. Salish: Sq ʔánča 'which', Cw níkwet-énəcc 'where', Ms énəcc 'id.'
84. JUMP. PCh \*təgaj- 'to jump'. Gil čarq- 'id.'. AR: PA \*kwāHk- (Ho 57.267) 'to jump'.
85. KETTLE. PChK \*kuke 'kettle'. AR: PCA \*axkehkwa (Bl 46.96) 'kettle'.
86. KNOW. PCh \*ləgäl- 'recognize, get sight'. Salish: Sq łqʷiʔ-s 'know be acquainted with', Ms łəqʷəl-əxʷ 'know'.
87. LAND, SHORE. PChK \*ʔerxə- 'shore'. Gil ırkí 'shore', GilS ırkíʃr 'id.'. AR: PA \*axki (Mc 35b.168), \*axkyi (Sb 41.301) 'land'. ? Salish: Sq s-yəXás 'large rock'.
88. LIVER, SPLEEN. PChK \*kilime / kłime 'kidney'. Gil čhulŋır 'spleen (fish-)'. Salish: Tw čólab 'lungs', š-čəlláb 'liver' (PSal \*kəlam ~ -ŋ).
89. LIZARD, FROG. PCh \*waməŋə- 'triton'. Gil mənəgaj 'lizard' Salish: R, ColM wárk 'frog'.
90. LONG, BIG. PChK \*kələ- 'great, big'. Gil kıl- 'long'. AR: PCA \*kenw- (Bl 46.120) 'long' (root); Y kneweʔl- 'be long, tall'; ? W(Ha) łəʷ 'long'. Other AK corresp. see Gr AK 165, Am 171.

91. LOOK. PChK \*lil-epV- 'look' (lil- 'eye'). AR: PCA \*-āp (Bl 46.92) 'look (suff.)'.
92. LOUSE. GilS hiš<sup>r</sup>k 'louse', Gil hisk-r 'nit'. AR: W(Ha) hikw 'louse'; Y mo-hkoh 'id.'; PCA \*ehkwa (Bl 46.93) 'id.'.
93. LOUSE, NIT. PCh \*gəttb- (< \*gətg-) 'nit'. Salish: Sh qWtíXe, Kal qtáXwe<sup>?</sup> 'louse'.
94. MAKE. PChK \*-(y)ərki- 'make'. AR W(T) hok- 'id.'; Y hohkum- 'to make, build, repair, cause'.
95. MAN. PChK \*ʔqlə- 'man, husband'. Salish: Sh qlmux<sup>w</sup> 'Indian; human being', Kal s-qélix<sup>w</sup> 'id.', M s-qəl'tmíx<sup>w</sup> 'man'.
96. MAN, PERSON. PCh \*nəməlbən 'Koryak'. Gil nívx, GilS níyvŋ 'man, person; Gilyak'. AR: PCA \*nāpēwa (Bl 46.107) 'male, man', PA \*nāpē- (Mc 35b.135) 'male'; Y pegit 'male (animal)', pegək 'man'. Salish (suffixal): Sh -mx / məx 'people', CdA -mš 'id.', etc. Other AK corresp. see Gr AK 166.
97. METAL, KNIFE. PChK \*walə 'women's knife'. Gil vāč, GilS wat 'iron'. Salish: Sh s-wl-wlilm 'iron', CdA w'ul'w'ul'ím 'iron, knife', M wəlwəlm 'iron, metal'.
98. MINK. Gil čhoŋsq 'mink'. AR: PA \*šānkwehšwa (Sb 67a.25) 'mink'.
99. MOSS, GRASS. PCh \*məjgə 'moss', \*məlgə 'turf'. Gil vaX 'moss'. AR: PA \*maškiXkiwi (He 73.156) 'grass', \*maškyēkwi 'swamp'. Salish: Sq máqWam 'moss; swamp', Ch qWām 'moss', Tw báqWab 'field'.
100. MOUTH. PChK \*lpələ 'cheek', \*lpəlo- 'to gnaw'. Gil ilm-//hilm- 'hold in the mouth'. Salish: s-pl-u-cn 'mouth', Kal s-pəl-ím'cən 'id.'. Cf also Gil ivlāx 'lip'.
101. NAME. PChK \*ʔəlŋə / \*ŋəlŋə 'name'. AR: W(T) wan- 'id.'; Y w-eg-enoy- 'to be named' (-eg- infix); PCA \*wīnl- (Bl 46.115), \*wīn-t- (Bl 46.115) 'name, tell'. Salish: Sq nəh, na(?) 'name', Cw snə 'id.'

102. NAVEL. PChK \*keŋi 'navel'. Gil k<sup>h</sup>ilms 'id.'. AR: PA \*mečilwi (Mc 35b.136) 'somebody's navel', (Pr.) \*wilyi 'id.'
103. NIPPLE. PChK \*muθvə ( ~ -t- -l- -t-) 'nipple'. Gil moč 'fem. breast, bosom'. AR: PA \*meθeni (Mc 35b.136) 'somebody's nipple'; W(Ha) βasar 'nipple', (Pr) básəd 'breast' (PAR \*mezV [~ -s-]). Cf AK 32.
104. NUT, ACORN. Gil pulk-s 'acron, bean'. AR: PA \*pakāna / -i (Go 65.216) 'large nut'.
105. ONE. PChK \*ʔəkne 'one'. Gil n̄t 'id.'. AR: PCA \*nektw- (Bl 46.120) 'one'; Cheyenne -nokä 'one'; W(T) kuc-, (Ha) ku'c- 'one'; Y koht- 'one', kohci 'once'. Salish: Sh nk'wuʔ, CdA nék'weʔ, Sq nač'-, Cl náč'uʔ 'one', etc. See Gr AK 144.
106. PADDLE, ROW. PChK \*teyme- 'to row'. Gil čombi-zombi- 'to row by turns'. Salish: Tw Xwóʔbat 'paddle', Cl Xwúʔnət 'id.'.
107. PARTRIDGE. Gil payi 'partridge'. AR: PA \*paxpaxkiwa / \*paxkiwa (cf. Sb 67a.16) 'partridge'.
108. PITCH, RESIN. Gil čhoX 'pitch'. AR: Fox šekāhkwa 'pitch', Shawnee šekwaki 'pine logs; chewing gum'. Salish: Sq čəmX 'pitch, resin', Cw céməX 'pitch'.
109. PUS, ROTTEN. PChK \*r(ə)qə- 'rotten', \*rqəyol- 'pus'. Gil lolq 'pus'. Salish: Sh yʔuq'w 'rotting, rotten', CdA doq'w 'wood is rotten', Tw yóq'w 'rot'; probable comparison with: Sh neq' 'rot', CdA naq' 'organic substance is rotten', ColM náʔq' 'rotten food'.
110. RAFT, BOAT. PCh \*timi 'raft'. Gil čom 'raft'. AR: PA \*čīmān-i (Mc 35b.160) 'canoe'.
111. RAIN. PChK \*ʔuxV 'rain'. Gil l̄x 'id.'. Salish: Sq yiq 'to snow', Cw yiq 'it's snowing', cf. Sq ʔáʔqn 'wet snow'.
112. RIVER. PChK \*kweyəm 'river'. Salish: Sq Xwam- 'rushing current', Cw Xwəwm; Ms Xwəym 'rapids, rushing current in sea or river'.



113. ROAD. PChK \*θvi-nəm 'road'. Gil čī-f 'id.'. Salish: CdA n-šégwel. Kal šuʔšuw'ét, Sq šuát, Pug šagʷt 'road', Cl sút 'door, road', Tw šə'wát 'road, door', ColM xəwal 'road, trail'.
114. ROCK, MOUNTAIN. PChK \*ʔenmə- 'mountain'. Salish: Sq s-man-t 'stone', s-manit '(high) mountain', Tw sə-bád-ed (3rd sg. possess. sə-bád-es) 'mountain'.
115. ROOT (EDIBLE). PChK \*pŋəl- 'root'. AR: PA \*oxpenya (Sb 41.301) 'groundnut, potato', PCA \*-xpenu- (Bl 46.121) 'tuber, potato'. Salish: Sq s-pán-an-xʷ 'potato-like plant', Wn s-pŋn-xʷ 'camas'.
116. ROOT. Gil vizlɨx 'root'. AR: PA \*wečyēpitki / \*wečyēpiski / \*wečyēpiški (Pr.) 'root'; Y (?)wəʔtɨtək 'id.'; W(Pr) uwəlápítkəʔl 'id.'. Salish: Sq šáwaq 'carrot', Cw šéwəq 'wild carrot'.
117. ROPE. PChK \*ʔviɬxə-t 'rope'. ?Gil ovruks, GilS ovrukšr '(special) rope'. ?Salish: Sq Xʷíɬ-m 'rope', Cw Xʷáyʔl-mʔ 'id.'. AR: PA wíškwe- / \*wíhkwē- 'wrap with a bundle-strap' (Pr.); Y (?)weskul 'strap', (?)weskwēlekʷs 'rope of wild grapevine'.
118. RUB PChK \*kele- 'to rub'. AR: W(Ha) kɬaʔ- 'to wash'; PA \*keθ- (Ho 57.259) 'graze, scratch', \*kesi- (Ho 57.258) 'rub, wipe, wash', \*kešip- (Ho 57.259) 'itch, scratch'. Salish: Sh qəs-qis-m 'to tickle', CdA qes 'scratch with nails'.
119. SCRAPE, SCRATCH. Gil Xarp- 'to scratch'. AR: PA \*kāxp- (Ho 57.255) 'crunch, scrape'. Salish: Sq Xip 'get nipped, scratched, touched (by stg, flying by)', Ms Xáyp'ət 'scratch'.
120. SEA. PChK \*Xijxə- 'sea'. Gil kerq 'id.'. Salish: Sq k'wul'kʷ 'salt water', Cw, Ms, Ch kʷal'kʷa 'sea'.
121. SEAGULL. PCh \*yaqlə- 'seagull'. Gil qoyla 'big seagull'. AR: Y keg-oʔs-neg 'seagull'; PA \*keyāškwa / \*kayāškwa / \*kayāhkwa 'id.'. Salish: Sq q'wíltq 'gull'; Ms, Ch q'wáɬtəq 'big gull'.
- 122 SEAL. PCh \*θəθka 'walrus'. Gil čhuynix 'id.'. AR: PA \*āskikwa 'seal' (Go 65.213). Salish: Cl ʔásxʷ, Tw ʔásaxʷ, Sq ʔasxʷ 'seal'.

123. SEE. PChK \*ʔlaXu- / \*ʔəɬXu- 'to see'. Gil indɪ//nʃrɪ- 'see', nú- 'look'. AR: PCA \*nē- 'see' (Bl 46.120), \*natw- 'seek' (Bl 46.122); Y new(-) 'see; allow'.
124. SHAKE. Gil liklik- 'shake (itr.), shiver'. AR: PA \*neki- (Ha 58.251) 'to shake'. Salish: Sh nXel- 'be afraid', ColM naXál 'afraid'.
125. SHAMAN. PCh \*θɪntə 'holy'. Gil čham, GilS čamŋ 'shaman'. ? AR: PA \*čipaya (Mc 35b.146) 'ghost, corpse'. Salish: Sq s-xwʔúmtɪn 'medicine man', Cw xʷənʔəməθət 'shaman's spirit quest'.
126. SHOOT. PCh \*pə- 'to shoot'. AR: PCA \*pe- (Bl 46.120) 'id.'.
127. SINEW. Gil toŋ-s 'sinew'. Salish: Sq \*tinx (root), ti-tn'x 'sinew', CdA tinč 'sinew, muscle', M tinx 'sinew'.
128. SISTER. PChK \*ʔələ(l)kV 'sister'. Gil nanak, GilS nanx 'elder sister'.
129. SIT. PChK \*θva- 'to sit'. Gil iʃrp-//tʰiv-//šriv- 'id.'. AR: PA \*ap- (He 73.157) 'sit'.
130. SKIN. \*xilxə 'skin; body'. Gil hal 'body; skin'. Salish: Sq k'wɪʔáwʔ 'skin (human, fish)', Cw k'wəɬəwʔ 'skin, hide'.
131. SKIN. Gil mosqar 'skin of dried fish'. AR: W(T) wátkoy 'skin'; Y (?)wəskun, -ʔwəs 'id.'; PA \*paskw-ēk-en-wi (Ge 41.309) 'tanned hide, leather'.
132. SLEEP. PChK \*ŋyəɬqə- 'to sleep'. AR: PCA \*nepəwa (Bl 46.97) 'he sleeps'; W(Ha) nɪtw- 'to sleep' (PAR \*neɬkʷV-).
133. SMOKE. PChK \*čqi- 'to smoke' (itr.), \*čqičqimə 'smoke'. AR: PCA \*θšəʔəməwə (Bl 25.145) 'tobacco'. Salish: Sq ɬ'íq'wɪm 'to smoke (itr.)', Cw s-ɬ'əyəq'əmʔ 'smoke'. Cf Gr AK 176.
134. SNAKE. PChK \*ʔəlxə 'snake'. Salish: Sq ʔəɬqayʔ 'snake', Cw ʔəɬqayʔ, CdA ɬq'íc'ānč 'id.'. AR: PA \*aθkōka 'snake' (Sb 41.299), \*-askwaya- (Ge 41.310) 'bloodsucker; snail'.

135. SNOW. PChK \*pəŋa- 'falling snow'. AR: PA \*meθponwi (SI 60.236) 'it's snowing'; W(Ha) paŋoʔr 'snow'; ? Y kipun 'winter'.
136. SNOW. Gil ŋaq-r 'snow'. AR: PA \*mexkwamya (Sb 41.301) 'ice'. Salish: Sq máqaʔ, Cw méqe, Cl ḡáqəʔ 'snow'. Cf Gr AK 105. PCh \*muqə- 'rain; hail'.
137. SNOW. PCh \*mulqə- 'the last spring snow'. Salish: Sh t-mukʷ-tm 'snow on trees', CdA mikʷ 'snow', Kal səméqʷət 'id.', M s-mákʷ-t 'snow on the ground'.
138. SNOW, HAIL. Gil aqm 'hail'. AR: PCA \*ākim- (BI 46.117-118) 'snow; white'.
139. SNOW, WHITE. PCh \*kanə- 'snow (spring-)'. Gil qonu- 'white', qana 'snowcap on a mountain', qana- 'white (about cloth)'. AR: PA \*kōnya (Ho 57.267) 'snow'.
140. SOFT. PCh \*jəθə- 'soft'. AR: Cree yōsk- 'tendre, doux'.
141. SPIT, SALIVA. PChK \*(?)hiʔńkwa 'saliva'. PA \*sehkʷ-i(?) (SI 60.236) 'spit'. Salish: Sq təXʷ-, Cw tXʷat 'to spit'.
142. SPOON. Gil miyx 'wooden spoon'. AR: PA \*ēmeskwāni (Mc 35a.39), \*ēmeXkwāna (probably -hkw-) (Sb 67b.49,54) 'spoon'.
143. SPOTTED. Gil tay-f 'spot, stain'. AR: W(Ha) tayalatk- 'spotted'; Y təgəʔykʰəʔəy- 'be spotted'.
144. SPRUCE, PINE. PCh \*tgegev 'larch'. Gil thvɨsk 'spruce'. AR: PCA \*šenkwāxkwa (BI 46.105) 'pine tree'. Salish: Tw c'əq'pe(h) / q'c'əq'pe(h) 'fir (-tree)'.
145. SQUIRREL. PChK \*ʔləkwɨV 'squirrel'. Gil laq-r 'squirrel', olvilak 'flying squirrel'. AR: PA \*anyikwa (Go 67a.9) 'squirrel', pelēnikwa (Sb 67a.21) 'flying squirrel'; Y pliʔw-es 'gray squirrel'.
146. STAND. Gil kɨpr- 'to stand'. PA \*-kāpi- (Mc 57.151) 'to stand'.
147. STAR. PChK \*ʔəŋer 'star'. Gil uńyr 'id.'. AR: PA \*aθankwa (Go 65.211) PCA \*aθānkwa (BI 25.138) 'id.'.

148. STINGING INSECT, LEECH. PChK \*kəm(V)XV 'stinging insect'. Gil qeŋax 'leech'. AR: PA \*akaskwaya (Sb 67b.49) 'leech'.
149. STONE. PCh \*pəlwə- 'metal, iron'. Gil paX 'stone'. AR: W(Ha) p̄latk 'stone, metal'; PCEA \*-āpeθkwi (Sb 41.300) 'rock, stone'.
150. STRONG. PChK \*kətvə- 'strong, solid, healthy'. ? Gil teqa- 'strong'. AR: Cree kist- 'former / être en tout solide'.
151. TAKE. Gil ye-//ke- 'take, buy'. AR: W(Pr) kh-án 'grasp, hold'; Y ?ekonem- 'to hold, to keep', (Pr) ?ekek- 'to clinch down'. Salish: Sh (c-)?ukw- 'take, bring, carry', kwen (root) 'take (hold of), hold (in place)', kwə́-en 'borrow', etc. (derivates of PSI root \*kWV- 'take, hold'); probable compar. with PSI \*kin? 'touch, catch'. Cf Gr AK 101.
152. TELL, VOICE. PChK \*quʔi 'voice; song'. AR: PA \*kelaw- (Ge 41.309) 'talk, speak'. Salish: Sh qwel- 'speak, talk', Sq qwal-qwəl- 'think; speak', etc.
153. TELL. PCh \*wət- 'tell'. Gil it- 'id.'. AR: PA \*āt- (Go 65.214) 'id.'.
154. THAT. PChK \*xu 'that'. Gil ku-ž 'that'. AR: W(T) ku 'definite article'; Y ku (article) 'the, that; who, which'.
155. THROAT. PChK \*ʔkəxə(r) 'throat'. Gil qorq-r 'id.'. AR: PA \*mehkwəkani (Mc 35b.144) 'somebody's neck', \*wehkwəkani (Vo 41.143) 'his neck'.
156. THROAT. PChK \*pilxə 'throat'. Salish: Cw məlqʷ 'uvula', Sq məlqʷ 'larynx'.
157. THOU. Gil čhi 'thou', čh- pref. 2nd. pers. AR: W(T) khu- 2nd pers. pronom. pref., khil 'you'; Y k'V- 2nd pers. pronom. pref, keʔl 'you (sg)'; PA \*kilawa 'thou' (Ha 87c.141), \*k(e)- 2nd sg pref. Salish: Sq ʔaxʷ, -axʷ predicative clitic, resp. subject suff. 2nd pers. sg.
158. TONGUE. PChK \*jilvə- 'tongue'. Gil hilx 'id.'. AR: Y \*hip̄, me-yp̄t 'tongue'. Salish: Sq -alxʷcał 'tongue'.
159. TOP. PChK \*xə'n- 'top'. Salish: Sh -qin', Tw -qəd, ColM -qən, Sq -qin 'top'.

160. TREE. Gil čiy-r 'tree; firewood'. AR: W(Ha) -ōti? 'wood'; PCA \*-āhtekw (Bl 46.106) 'stick, wood, tree', PCEA \*-e?tekqw- (Sb 67b.56) 'tree; stick, dry wood'. Salish: Sq s-cəq 'wood, tree, log, stick', Cw θq-et 'tree'.
161. URINATE. Gil čhu- 'to urinate'. AR: PA \*ošeki (Mc 35b.154) 'he, she urinates', PCA \*šekiwa (Bl 25.146) 'he defecates'; W(Ha) tīk-al- 'urinate'. Salish: Sq sáXwa? Cw sáXwa 'urine', Tw sáxwo 'urine (male)'.
162. WALK. PChK \*pejV- 'walk'. Gil vi- 'go', ve- 'run (about animals)'. AR: PCA \*-pah-tō (Bl 46.91) 'run'.
163. WATER. PChK \*?ičq(w)ə- 'wet'. Gil čhaX '(fresh) water; stream'. Salish: Sh k'wəṭ-cəXw-ciXw 'waterfall', CdA hin-céXut 'stream, river', Sq c-cəXwm 'waterfall, falls'.
164. WE. PChK \*muri 'we'. Gil mer, GilS min 'we'. Salish: Sq n-ímaṭ person. subst. 1st pers. pl., -umuṭ obj. suff. 1st pers. pl., M nəmnímaṭ 'we', Tw debát 'we', etc.
165. WEASEL. PChK \*?imšiq- ( ~ -mθ-) 'ermine'. AR: PA \*šenkwhesi (Sb 67a.25) 'weasel'. Salish: Sh si-sk 'gopher', CdA sič', Kal síšč 'ground squirrel'.
166. WHALE. PChK \*yuni 'whale'. Gil keŋ / qeŋ 'whale'. Salish: Sq qʷanís, Cw qʷónəs 'whale'.
167. WIFE, WOMAN. PChK \*ŋaw- 'female', Gil umgu 'wife, woman'. Salish: Sh nuXw-nXw 'woman over 12-14 years old', CdA noXnoX 'spouse', etc.
168. WOMAN. PChK \*škəvV 'woman (elder)'. AR: PA \*eθkwēw- 'female, woman'.
169. WOMAN, GIRL. PChK \*taŋi 'girl'. Salish: Sq s-tán-ay?, Cl s-táni?, Tw s-táday 'woman'.

## ABBREVIATIONS

- AK – Almosan-Keresiouan  
AR – Algonquian-Ritwan  
BC – Bella Coola  
BL 25 – see Aubin 1975, p. vi-ix.  
BL 16 – see Aubin 1975, p. vi-ix.  
CdA – Cœur-d-Alène  
Ch – Chilliwank  
Cl – Clallam  
CoIM – Moses-Columbian  
Cw – Cowichan  
Esk – Eskimo  
Ge 41 – see Aubin 1975, pp. vi-ix.  
Gil – Gilyak (= Nivkh), Amur dialect  
GiLS – Gilyak, East-Sakhalin dialect  
Go 65 – see Aubin 1975, pp. vi-ix.  
Go 67a – see Aubin 1975, pp. vi-ix.  
Go 71 – see Aubin 1975, pp. vi-ix.  
Gr – Greenberg 1987  
Gr AK – chapter 'Almosan-Keresiouan' in Greenberg 1987.  
Ha – Hass 1958  
Ha 58 – see Aubin 1975, pp. vi-ix.  
Ha 67a – see Aubin 1975, pp. vi-ix.  
Ha 67c – see Aubin 1975, pp. vi-ix.  
He 73 – see Aubin 1975, pp. vi-ix.  
Ho 57 – Hockett 1957  
IJAL – International Journal of American Linguistics  
K – Kamchadal (= Itelmen)  
Kal – Kalispel  
Mc 35b – see Aubin 1975, pp. vi-ix.  
Ms Musqueam  
PA – Proto-Algonquian  
PAR – Proto-Algonquian-Ritwan (= Proto-Algic)  
PCA – Proto-Central Algonquian  
PCEA – Proto-Central-Eastern Algonquian

PCh – Proto-Chukchi-Koryakan  
PChK – Proto-Chukchi-Kamchatkan  
Pr – Proulx 1984  
PSal – Proto-Salishan  
Pug – Puget Sound  
Sb 41 – see Aubin 1975, pp. vi-ix.  
Sb 67a – see Aubin 1975, pp. vi-ix.  
Sb 67b – see Aubin 1975, pp. vi-ix.  
Sh – Shuswap  
Sl 60 – see Aubin 1975, pp. vi-ix.  
Sq – Squamish  
T – Teeter 1964  
UCPL – University of California Publications in Linguistics  
Tw – Twana  
Vo 41 – see Aubin 1975, pp. vi-ix.  
W – Wiyot  
Y – Yurok

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## RECONSTRUCTIONS

# KAMCHUKCHEE ROOTS

Oleg Mudrak

[The following list represents the reconstruction of Kamchukchee (-Chukchi-Kamchatkan) roots by O. Mudrak. According to Mudrak and Nikolaev, Kamchukchee, along with Gilyak (= Nivkh), is related to Almosan-Keresiouan, a phylum of Amerind (in Greenberg's terminology). According to Dolgopolsky, Greenberg, et. al., Kamchukchee is related to Nostratic.

See the table of Kamchukchee phonemes at the end of the list. -V.S.]

* <i>(m)əŋqa</i>	'what'
* <i>-(y)ərki-</i>	'to make'
* <i>-əlɣəlɣ</i>	'to be similar'
* <i>-twa-</i>	'to win'
* <i>ʔ(ə)ʔuxɬ</i>	'rain'
* <i>ʔčal-</i>	'far'
* <i>ʔečxə-</i>	'light, white'
* <i>ʔexɣɬ-, ʔexɣɬ-</i>	'ebb'
* <i>ʔelwə-, ʔeʔlu-</i>	'to gather'
* <i>ʔem</i>	'only'
* <i>ʔerχə-, ʔerχə</i>	'meat, boiled fish'
* <i>ʔerxe</i>	'shore'
* <i>ʔetal-mən</i>	'southern, valley peoples'
* <i>ʔewχəkɬ</i>	'wild lily'
* <i>ʔewiv-</i>	'to rise (itr.)'
* <i>ʔeymaq</i>	'soup, bouillon'
* <i>ʔəɬŋə</i>	'name'
* <i>ʔəɬɬiŋ, ʔəɬiŋ-</i>	'fish-net'
* <i>ʔəɣŋɬ</i>	'on the outside'
* <i>ʔəɣkətɬ-</i>	'to be ashamed'
* <i>ʔəθo-, ʔəθo-</i>	'to come out'
* <i>ʔsətχə, ʔsətχə</i>	'red'

\*?xeqa- 'bad'  
 \*?xeyluʃi 'doll'  
 \*?xaka-,xaka- 'hot'  
 \*?xaməθqa,ʔməθqa 'fat(n.)'  
 \*?xo(γ)la 'boy,lad'  
 \*?aʔwənwa 'hole>window'  
 \*?aʔwoʔxa 'nest'  
 \*?ačqa- 'lame;to limp'  
 \*?aŋya- 'to command'  
 \*?aɪpəŋ- 'to repair'  
 \*?apʔaqaɪ- 'to sneeze'  
 \*?arxe- 'to undress'  
 \*?avjəɪa 'sack'  
 \*?axta- 'to cut'  
 \*?ayp- 'to close'  
 \*?aywa-ʔaywa 'brain'  
 \*?ayxəva 'north'  
 \*?əčja- 'to string,to thread'  
 \*?əčx,ʔəčxə- 'they'  
 \*?əŋer 'star'  
 \*?əŋqa- 'hunting'  
 \*?əŋqi- 'illness'  
 \*?əjvəkɪa- 'to strike,to beat'  
 \*?əjxi- 'to smell'  
 \*?əkje- 'sole,foot'  
 \*?əkne-ŋ 'one'

\*ʔəɪʔəχja 'mother'  
 \*ʔəɪʔəwju 'nephew'  
 \*ʔəɪŋi 'very'  
 \*ʔəɪqɬ- 'cold'  
 \*ʔəɪwə-ʔəɪwə 'caribou'  
 \*ʔəɪxə-ʔəɪxə 'snake, worm, caterpillar'  
 \*ʔəɪʔəx 'father'  
 \*ʔəɪxu-, ʔəɪxu- 'to see, to look'  
 \*ʔəɪu-ʔəɪu 'salmon sp.'  
 \*ʔəɪwɬ 'friend, other man'  
 \*ʔəɪm- 'deep'  
 \*ʔəɪmə-ŋ 'all'  
 \*ʔəɪməj- 'to leave'  
 \*ʔəɪməjku- 'light, easy'  
 \*ʔəɪməɪqɬ- 'scoop, dipper'  
 \*ʔəɪmjə- 'bitter'  
 \*ʔəɪmjə-ʔəɪmjə 'ashberry'  
 \*ʔəɪŋ, ʔəɪŋ- 'he'  
 \*ʔəɪŋɬ 'fish'  
 \*ʔəɪŋə- 'this'  
 \*ʔəɪŋəm- 'village'  
 \*ʔəɪpəŋ- 'to cook'  
 \*ʔəɪpəŋ-ʔəɪpəŋ 'boiled food'  
 \*ʔəɪrət, ʔəɪrɬ- 'bow, gun'  
 \*ʔəɪrɬəθək 'tomorrow'  
 \*ʔəɪθəʔnə 'den, lair'  
 \*ʔəɪɪəʔŋɬ 'brother'

\*ʔaytəx- 'sweet'  
 \*ʔaym(ə)l- 'soft'  
 \*ʔayt-,yət- 'to bring in'  
 \*ʔiʔn'emθə- 'patch'  
 \*ʔiɕq(w)ə- 'damp,sodden'  
 \*ʔijək 'a kind of edible root,makarsha'  
 \*ʔikəm- 'short'  
 \*ʔilq-ʔilq 'milt,soft-roe'  
 \*ʔilqə-ʔilqə 'bark'  
 \*ʔilxə- 'to wash,to wipe'  
 \*ʔixəθ- 'to wash oneself'  
 \*ʔiməθ 'load'  
 \*ʔiml- 'to drink'  
 \*ʔimlɐ 'water'  
 \*ʔimθ- 'to carry on the back'  
 \*ʔimθəq,ʔimɕəq 'ermine'  
 \*ʔinan-luxɐ- 'to show'  
 \*ʔiprə-,ʔipjə- 'to splash'  
 \*ʔiθxɐ 'slippery'  
 \*ʔit- 'to be'  
 \*ʔita 'when'  
 \*ʔitmɐ- 'rough,bald'  
 \*ʔivθə- 'low'  
 \*ʔiwəl- 'long'  
 \*ʔiyəqɐ- 'terrible'  
 \*ʔiykəɾ- 'to thist;bitter'  
 \*ʔjəɾʔə- 'red'

\*ʔjəx-ʔtəx-,ʔtəx-ʔtəx- 'to tickle'  
 \*ʔjili- 'to choose,to select'  
 \*ʔjimja- 'dense,thick'  
 \*ʔjoxəv- 'to meet,to reach'  
 \*ʔkeŋʌ-ʔkeŋʌ 'fish-belly'  
 \*ʔkəjxərŋə- 'shoal'  
 \*ʔkərx- 'dry'  
 \*ʔkəwə- 'to burn(itr.)'  
 \*ʔkəxə(r) 'throat'  
 \*ʔkitiŋ 'mosquito'  
 \*ʔleyəvi- 'orphan'  
 \*ʔliŋi-(-tiŋi) 'it's right'  
 \*ʔliŋu- 'to like,to love'  
 \*ʔla- 'to say'  
 \*ʔlə(l)kʌ 'sister'  
 \*ʔləʂvʌ 'brow'  
 \*ʔləkwʔʌ 'squirrel'  
 \*ʔləi-piŋ- 'eyelid'  
 \*ʔləla 'eye'  
 \*ʔləla-ʔʂxʌ 'eyelash'  
 \*ʔləp-ʔləp 'joint'  
 \*ʔləqvi- 'dirty'  
 \*ʔləy-ʔləy 'dew'  
 \*ʔliŋtə- 'heart'  
 \*ʔlinvi- 'to console'  
 \*ʔlil-epʌ- 'to see'  
 \*ʔlilə 'mitten'



\*ʔmalɐ- 'to believe'  
 \*ʔpɪ- 'to bite, to gnaw'  
 \*ʔuvɪu-, ʔuʔɪu- 'breast, nipple'  
 \*ʔvi- 'to cut'  
 \*ʔɛχ- 'together'  
 \*ʔeqwəθ 'head of animals'  
 \*ʔakmə-ʔakmə 'gills'  
 \*ʔəkjəθ- 'to dive'  
 \*ʔaɪa- 'to regale, to gourmand'  
 \*ʔiŋəɪ- 'live coals'  
 \*ʔiŋvi- 'to irritate'  
 \*ʔiməɪ(ə)q 'crumb, chip'  
 \*ʔirmə-, ʔimrə- 'danger, angry'  
 \*ʔqəl 'bone'  
 \*ʔmakə 'face'  
 \*ʔmatu- 'infirm, unable'  
 \*ʔnɪmɔ-ʔnɪmɔ 'land, earth'  
 \*ʔoʔɪa- 'to call'  
 \*ʔočkəθ 'mrtlet'  
 \*ʔom- 'warm'  
 \*ʔomət- 'to bind, to knit'  
 \*ʔqɪə(-k) 'man, husband'  
 \*ʔquʔq(-əɪ) 'hole, ice-hole'  
 \*ʔθəl-ʔθəl 'Mercus sp.'  
 \*ʔtəlɪ 'scales, skin'  
 \*ʔuʔwe- 'to kiss'  
 \*ʔutxə- 'soft, swampy'

\*ʔuvika 'carcass, body'  
 \*ʔuwtə-ʔuwtə 'tree, wood'  
 \*ʔvaŋʂa 'broad, wide'  
 \*ʔvaia-ʔmj- 'to hear'  
 \*ʔvaika- 'to sink'  
 \*ʔvaia- 'small, little'  
 \*ʔvaixa-, vaixa- 'thin'  
 \*ʔvaixaʔ 'rope'  
 \*ʔvitwə- 'old, decrepit'  
 \*ʔxamaixa, ʔmaixa 'fire'  
 \*ʔxən- 'top, height'  
 \*ʔxənŋi-, ʔxənŋi- 'such'  
 \*ʔxənəixa, ʔnəixa 'wool, fell'  
 \*ʔxənkə- 'satisfied, tender'  
 \*ʔxərxa-ʔxərxa 'high'  
 \*ʔxətu 'rib'  
 \*ʔxu- 'that'  
 \*ʕerŋə- 'to cry, to weep'  
 \*ʕaʂjola 'fox'  
 \*ʕəʔŋia- 'to throw (tr.)'  
 \*ʕəʔŋta- 'to throw (tr.)'  
 \*ʕəŋi- 'to sew'  
 \*ʕəmla- 'to lick'  
 \*ʕira 'knee'  
 \*ʕivla- 'to drag'  
 \*ʕjəli- 'to go, to ride'  
 \*ʕkəŋvi- 'to bend'

\*čqí- 'to smoke'  
 \*čqíčqíma 'smoke'  
 \*čvoqəra- 'ant, gadfly'  
 \*čwəšx(ɿ) 'hair'  
 \*ŋʔəčwə- 'loud'  
 \*nejku-nejku 'swan'  
 \*nelvə 'herd'  
 \*ŋaw- 'female-'  
 \*ŋawíŋə- 'wife'  
 \*ŋay-ŋay 'mountain, rock'  
 \*ŋət- 'to burn, to smoke'  
 \*ŋət-ŋət 'smoke'  
 \*ŋərkiθ 'bag, sack'  
 \*ŋayθeq 'two, second'  
 \*ŋínvə- 'many'  
 \*ŋíθʔə- 'to hunt'  
 \*ŋojŋɿ 'tail'  
 \*ŋolka- 'slippery icy field'  
 \*ŋraq 'four'  
 \*ŋroq 'three'  
 \*ŋtoɿɿ- 'to fall'  
 \*ŋu- 'that'  
 \*ŋuyčkwə-, ŋvičkwə- 'weak'  
 \*ŋyeɿke- 'thunder, crash'  
 \*ŋyətqə- 'to sleep'  
 \*šxəɿwə- 'knot'  
 \*šəq- 'which, what'

\*šayla- 'to slip, to slide, to roll'  
 \*šəlaŋa- 'to think, to suppose'  
 \*šəpa- 'pestle'  
 \*šilaq-šila 'soup, tolkusha'  
 \*šilxa-, šilwə- 'danger'  
 \*šit-šit 'wing'  
 \*šiqpuka 'polar fox'  
 \*škəva, θkəva 'woman (elder)'  
 \*šwaŋa- 'to turn, to return'  
 \*xaχ-xaχ 'axe-handle'  
 \*xai-xai 'snow'  
 \*xaŋwa 'axe, hammer'  
 \*xarvi 'rafter'  
 \*xəčəxəθa, ?əčəxəθa 'road'  
 \*xəŋ-xəŋ 'nose'  
 \*xəŋəθa- 'nostril'  
 \*xəšxə 'dog'  
 \*xəmqə- 'pester with ...'  
 \*xəra-xəra 'rose willow'  
 \*xətχəma 'bone'  
 \*xətva-xətva 'boat'  
 \*xiχ(λ) 'sea'  
 \*xijxə 'sky'  
 \*xiθu-xiθu, xišva-xišva 'goose'  
 \*xujamθawilχa 'person'  
 \*javai 'back(adv.)'  
 \*jilxa- 'younger brother'

\*jilə- 'to give'  
 \*jilvə-jilvə 'tongue'  
 \*jixəjɬ 'guts,intestine'  
 \*jkila- 'to run away'  
 \*jkuʔʂ- 'to buy'  
 \*jo-(-ŋ-) 'to hide'  
 \*jqəθ- 'go away'  
 \*junəθ- 'to live'  
 \*jvəl,ɬvəl 'wind'  
 \*k(ə)mi-ʔn 'child'  
 \*kele- 'to write;motley'  
 \*kele- 'to rub'  
 \*kelilxən 'gay-coloured seal'  
 \*kewə-kewə 'gristle'  
 \*keymɬ,kəlmɬ- 'to boil'  
 \*kanɬa 'pipe'  
 \*kəʔnəx- 'to blaze,to fire'  
 \*kəʈʔeʔɬ,kəʈʔelʔɬ 'forehead'  
 \*kəʈʔə-n 'head'  
 \*kəʈwə- 'good'  
 \*kəjʈɬ,kəʔn'ʈɬ 'nest'  
 \*kəjɬ-kəjɬ 'navel'  
 \*kəl- 'to come'  
 \*kəlime,kɬime 'kidney'  
 \*kəlyə- 'bead'  
 \*kəɬxi- 'stingy'  
 \*kəm-kəm 'worm'

\*kama- 'clothing'  
 \*kamaχa,kəmxə 'stinging insect'  
 \*kəmxə-,kəxma- 'to pinch'  
 \*kəθxə-m-kəθxə-m 'sabel'  
 \*kətepa 'mountain goat'  
 \*kəta- 'straight,har,strong'  
 \*kəv- 'to get accustomed'  
 \*kəva- 'to hit'  
 \*kəxəɕ- 'hand'  
 \*kəyla- 'great,tall'  
 \*kiləməθa 'fly,mosquito'  
 \*kiliχa- 'bad'  
 \*kiliθmə 'bumble-bee'  
 \*kuke- 'kettle;to cook'  
 \*kurχa 'two,pair'  
 \*kvətqə- 'dark,black,blue'  
 \*kwaməika 'chin,lower lip'  
 \*kwəp-nə 'tooth'  
 \*kwəxəla- 'to scrape with claws'  
 \*kwilxə-kwilxə 'birch'  
 \*kwir-kwir 'alder tree'  
 \*kwiye-m 'river'  
 \*kwunə-kwunə 'cedar-cone'  
 \*lχeyma 'puppy'  
 \*lχəʔn'əʔtχa 'withers'  
 \*lχəx-nə 'wolf'  
 \*lχiθe- 'to gallop,to run'

\*lixit-na 'neck'  
 \*lamηal 'tail,story'  
 \*lax-ər 'bow'  
 \*liη(ə)l 'blueberry'  
 \*liη-liη,ηil-ηil 'roe'  
 \*lix-lix 'egg'  
 \*lpəl-ηΛ 'cheek'  
 \*lpəlo- 'to bite'  
 \*lpiw-,lpχiv- 'to cut'  
 \*lqəyol 'ulcer'  
 \*lvilə- 'to drink'  
 \*l(γ)əηl 'girl'  
 \*lʔəlηΛ 'roe,fish-roe'  
 \*ləməlqΛ 'island'  
 \*lərə- 'paint;to dye'  
 \*ləχΛ-ləχΛ 'sun'  
 \*ləmxə-ləmxə 'sack,hood'  
 \*ləwan'Λ 'foot-wear'  
 \*lɪʔnkwa,ʔlɪʔnkwa 'saliva'  
 \*ləoċ-ləoċ 'back of the head'  
 \*ləomċΛ,ləyomċΛ 'poplar,red willow'  
 \*ləxəyɪ-ləxəyɪ 'sweat'  
 \*ləxi j(-)kəyɪ- 'to lose one's way'  
 \*ləmekwə 'bear'  
 \*ləmɛl- 'good'  
 \*ləmeyċə- 'far away'  
 \*ləmə- 'where'

\*malí- 'to sweep'  
 \*mama 'tent'  
 \*maroqala 'wild onion'  
 \*məʔla- 'to dance'  
 \*məima-məima 'blood'  
 \*marə-marə 'tear'  
 \*max-max 'wave'  
 \*mičxə 'old (man,woman)'  
 \*miŋ 'which'  
 \*miŋla 'hare'  
 \*mil-mil 'louse'  
 \*milχa 'berry'  
 \*miʔ- 'good,nice'  
 \*mixa-mixa 'fry,young fish'  
 \*mki,mkin- 'who'  
 \*moŋra-moŋra 'palm'  
 \*munkəɭ 'lock,clasp,buckle'  
 \*mur,murx- 'we'  
 \*n'-ʔja- 'to touch'  
 \*n'-axčə- 'to retain'  
 \*n'-ivʔə- 'to teach'  
 \*n'-yu- 'to watch over'  
 \*n'ovra 'den,lair'  
 \*n'u- 'to eat'  
 \*neneʔ- 'young of animal,child'  
 \*nχ(a)lə- 'to become stg'  
 \*nanqə- 'belly,stomach'



\*tale-k- ? 'to dance' (291)  
 \*tanke- 'moon;to shine' ()  
 \*tapka- 'kind of rope' (148)  
 \*taq(ü)- 'temple,plait' ()  
 \*tawə- 'wave' ()  
 \*tuḡə-,təḡə- 'to trample;foot' ()  
 \*tuʔə- 'fist;to push away,to strike' (18)  
 \*tuj(i)ʔ- 'snipe' (229)  
 \*tuku-k 'chief,wealthy person' (2)  
 \*tuni,təni 'forehead,back of the head' ()  
 \*tupi-,təpi- 'smell,odor,stench' (169)  
 \*tuta- 'to hear' ()  
 \*tḷkeḡ(i)- 'to arrive,to land' (110)  
 \*təna-,tuna- 'spreadfast,firm' ()  
 \*təwa 'man,body' ()  
 \*wa- 'here' (14)  
 \*wuḡru- 'moss' (145)  
 \*wuḡi- 'to heat' ()  
 \*wuju- 'brother,younger sibling' (288)  
 \*wula-k 'bearberry' (257)  
 \*wunḷ- 'story,tale' (297)  
 \*wuʒe- 'load' (45)  
 \*wḷi- 'to burn;red' ()  
 \*ʒ(i)ʌ 'weather,air,world' (28)  
 \*ʒ(i)əʔ- 'wide,broad' (166)  
 \*ʒ(i)n'ə- 'to dream' (136)  
 \*ʒ(i)na 'shore,side' (167)

\*nəŋəɪx 'poplar, willow'  
 \*niŋvit 'God, ghost, spirit'  
 \*nɟat- 'to ask, to beg'  
 \*nkəlmɬ, nkəlʔɬ 'kernel of a nut'  
 \*nki-nki 'night'  
 \*nqiw- 'strength, force'  
 \*pʔəɪqɬ, pχəɪqɬ 'eagle'  
 \*peʔɪa- 'to throw (tr.)'  
 \*pŋəl-pŋəl 'root'  
 \*pχəθ 'hole'  
 \*pχon 'mushroom'  
 \*paʔiɬɬ 'hat'  
 \*paŋrə-paŋrə 'armpits, groin'  
 \*panʂa- 'skin from the deer's feet'  
 \*pəŋə- 'it's snowing'  
 \*pəŋlu- 'to end'  
 \*pəjɬ- 'to wander, to ramble'  
 \*pəkəɬar-, kəvɬar- 'haw-thorn'  
 \*pəkəɬar-, kəvɬar- 'haw-thorn'  
 \*pəɬa- 'big'  
 \*pəna- 'to sharpen'  
 \*pətχo- 'many'  
 \*piŋ-piŋ 'ashes'  
 \*piŋɬj- 'to burn, to shine'  
 \*piɬəŋr- 'flat'  
 \*pilxə- 'food, throat'  
 \*pinʂə- 'to throw (itr.)'

\*pkəθ(v)- 'to come,to arrive'  
 \*ponta-ponta 'liver'  
 \*qapɕi 'back'  
 \*qaylə 'belly'  
 \*qaytakλ 'brother-in-law'  
 \*qəlʔe- 'lazy'  
 \*qaməla-qaməla 'marrow'  
 \*qərχλ-qərχλ 'cape'  
 \*qətλ-qətλ 'frozen snow-crust'  
 \*qɪʔwə- 'bad'  
 \*qixwλ 'nettle'  
 \*qiytə- 'cold'  
 \*qorə- 'deer'  
 \*qpətqə- 'to beat'  
 \*qulʔi 'other,second'  
 \*quli- 'voice,cry'  
 \*qulxə,kulxə 'skin (animal's)'  
 \*qunpən 'forever,always'  
 \*qunvəʂ 'once,forever'  
 \*qup(k)- 'to be tired,to suffocate'  
 \*quqəl(ə)- 'to make a hole'  
 \*quyma 'trousers'  
 \*qvən- 'thin,narrow'  
 \*qwalqwa(l) 'fat of animals'  
 \*qwənvə 'pit'  
 \*qwəxλ-qwəxλ 'nil,claw'  
 \*rʔəʂʔλ,rχəʂʔλ 'sinew'

#rxē-,rxē- 'to enter'  
 #rara 'breeching'  
 #raʂʔa-raʂʔa 'lungs'  
 #raɪ- 'to lie'  
 #raq- 'to rot'  
 #ri- 'glad,happy'  
 #rit-rit 'belt,girdle'  
 #raqayol 'pus'  
 #rxiti-,rxiti- 'inside'  
 #θenna- 'to smile'  
 #θɛitiv- 'to smile,to enjoy'  
 #θaxalwa-ʂ 'day'  
 #θaxa- 'to pour out liquid'  
 #θaki-θ- 'to smell;odour'  
 #θale- 'to walk'  
 #θalva- 'to burn(litr.)'  
 #θatəx- 'to melt,to thaw'  
 #θam- 'to kill'  
 #θamka-θamka 'hummock'  
 #θan'a- 'to weigh on'  
 #θilma-θilma 'eagle'  
 #θiθi- 'needle'  
 #θka- 'to fight'  
 #θkiv- 'to spend the night'  
 #θku- 'to end'  
 #θop- 'to close'  
 #θva- 'to say'

\*θva- 'to be,to sit'  
 \*θva- 'to sit'  
 \*θvi-nam 'road,footstep'  
 \*t(ə)kəl- 'food,meat'  
 \*tewəŋ-,tapŋ- 'to worry,to be bored,to get tired'  
 \*teymə- 'to row'  
 \*tŋə- 'dawn is broking'  
 \*tχeɪə- 'to urinate'  
 \*tχeθ-tχeθ 'urine'  
 \*tχəŋəċ 'prow'  
 \*təʔla- 'to beat'  
 \*təm-təm 'growth'  
 \*tanŋə- 'enemy'  
 \*tawɪ-mʌ 'nomad'  
 \*təʔvɪv- 'to lift,to rise (tr.)'  
 \*təl- 'to make stg from stg'  
 \*təmŋʌ- 'to dissapear'  
 \*təmlʌ 'near'  
 \*təvɪə- 'to shake (tr.)'  
 \*təwjaŋ- 'to string at the leash'  
 \*təxla-,təʔla- 'old (man,woman)'  
 \*ti- 'here'  
 \*tiŋu- 'to pull'  
 \*tirxə- 'sun,moon'  
 \*tkiθ-,ċkiθ- 'to remember'  
 \*tunvəx-,tumxə- 'relative,friend,brother'  
 \*tur,turx- 'you'

\*tvi- 'to stand'  
 \*txava-,txma- 'to forget'  
 \*txiliv- 'to make stg from stg'  
 \*uyi- 'to burn(tr.)'  
 \*vaŋxər 'mouth'  
 \*vəḏqə- 'dark'  
 \*vəlqə 'black,blue;charcoal'  
 \*vəʔpa- 'spade'  
 \*vətʌ-,wətʌ- 'work'  
 \*viḏwʌ 'birch sp.'  
 \*viχəjʌ 'grass'  
 \*viχə- 'to die'  
 \*vilvʌ 'ear'  
 \*vxi-,ʔvxi- 'to swim,to float'  
 \*welkəθxə- 'crow,magpie'  
 \*wetkwʌ 'raven'  
 \*wəʎə 'knife'  
 \*wəʎqə- 'jaw'  
 \*wayva- 'to cry'  
 \*wə- 'to scrape'  
 \*wəɾnik 'animal'  
 \*wətχə-,ʔvətχə- 'straight'  
 \*wəyʌ-wəyʌ 'thimble'  
 \*wil- 'sour'  
 \*wil-ʔiʔnkwa 'slime'  
 \*wiliw- 'to scoff at'  
 \*wirwi 'bush'

\*wiθvΛ-wiθvΛ 'salmon sp.'  
 \*wit-wit 'seal'  
 \*wʃət- 'to breathe'  
 \*wʃi-wʃi 'breathe'  
 \*xɕiŋ- 'beautiful'  
 \*xe-wi-əθ 'sour,rotten'  
 \*xəʃwΛ 'adze,axe'  
 \*xəʃxul- 'to narrate'  
 \*xəɕkΛ 'foot'  
 \*xəʃ,xən- 'thou'  
 \*xəlxə- 'skin,body (human)'  
 \*xəʃxi-,xəʃxi- 'to starve,to grow scare'  
 \*xəm,xəmn- 'I'  
 \*xənv- 'middle'  
 \*xəθo- 'side'  
 \*xəθwə-xəθwə 'lake'  
 \*xətχə 'autumn'  
 \*xəvxə- 'stone,rock'  
 \*xil-xil 'ice'  
 \*xitʃΛ-xitʃΛ 'stairs'  
 \*xʃivəθ- 'linger;to lag behind'  
 \*xpi- 'son;slave,servant'  
 \*xtiŋ- 'good,fine'  
 \*yaqəɬΛ 'seagull'  
 \*yəlxə- 'wolverine,fox'  
 \*yəqpuʃΛ 'handle,haft'  
 \*yərxə- 'to put,to pile'

*\*yineya* 'cloud'

*\*yinərvən* 'bay, shore'

*\*yuŋi-yuŋi* 'whale'

ʔ	č	e	ŋ	š	χ	a
ə	i	j	k	l	ʎ	m
n	n'	o	p	q	r	θ
t	u	v	w	x	y	



THE RELATIONSHIP OF THE NOSTRATIC FAMILY LANGUAGES:  
A PROBABILISTIC EVALUATION OF THE SIMILARITIES IN QUESTION\*

Vladislav Illich-Svitych

In order to establish a relationship between two or more languages, comparative linguistics employs the method of identifying morphemes, making distinctions between those with purely lexical, lexico-grammatical, word-formative and formative meanings. In situations in which the compared languages are sufficiently closely related, the relationship is clear from the large number of elements identified. It is further indicated by the existence of a series of systems in the compared languages consisting of morphemes identical in origin, i.e. systems of numerals, pronouns, substantive inflection, verb tense, etc. It is a different matter if the compared languages are assumed to be only distantly related; e.g. the initial linguistic system is separated from descendant systems by a significant period of time. In such cases, we should expect the loss of a significant portion of morphemes identical in origin. The final result of this process is the destruction of the old genetically identical systems of morphemes, and their replacement by new, noncomparable systems.

At the same time, if the relationship between the compared languages is not so distant that the elements identical in origin appear to have been completely displaced, one can expect that a definite, though very limited, number of the most stable linguistic elements in the initial linguistic base, which comprise the core of the morphological, word-formative and lexical systems of language, will be preserved in the descendant systems.

Such a situation can be observed in the comparison of [the six Nostratic families.] Despite sharp differences between the systems of the proto-languages of the Old World, on the proto-linguistic level, it is possible to detect a series of significant morphemic similarities, specifically in the composition of the most stable morphological, word-formative and lexical elements.

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\*This article is the introduction to *Opyt sravneniia nostraticheskikh iazykov (semitokhamitskii, kartvel'skii, indoevropeiskii, ural'skii, dravidiiskii, altaiskii)*, 2 vols. and vol. 3, part 1 to date (Moscow: Nauka, 1971- ) vol. 1, 3-5.

On the other hand, when comparing two or more languages known to be unrelated (for example, artificially created languages) there will always be a certain percent of coincidental similarities between morphemes, and the higher the percent, the less strict the criteria for formal and semantic similarities will be. Clearly, a special proof is necessary to show that the similarities found between compared languages are not accidental, but rather point to a distant linguistic relationship. Similar proof is obviously also desirable in studying the similarities between the six linguistic systems under consideration in the present work, e.g., the six proto-languages of the Old World, because the differences between them are so great that the supposed relationship could only be very distant. Toward this end, we propose the following method of evaluating the character of the similarities collected, which is not dependent on the procedures involved in their collection.

We shall examine the similarities between morphemes with lexical meanings that have no descriptive characteristics, and do not belong to any set of frequently borrowed lexicon. We will take the similarities between three pairs, made up of any three of the six proto-languages being compared, for example, between Indo-European and Uralic, Indo-European and Altaic, and Uralic and Altaic. On the basis of material taken from a comparative dictionary, these similarities are in quantities  $x$ ,  $y$ , and  $z$ . Clearly, these similarities can be either unmotivated, that is, the result of coincidence, or motivated. In the latter case, they can only be taken to indicate a genetic relationship between each pair of compared proto-languages, since the two other sources of motivated similarity, i.e., borrowing and 'elementary relationship', have been eliminated due to the selection of the similarities. Let us presume that the given similarities are the result of coincidence. In this case, according to the theory of probability, a number of similarities, common to all three compared languages must be close to a number within the limits  $x$  to  $z$ . The actual number of triple similarities between Indo-European, Uralic, and Altaic is  $A$ , i.e. several times greater than expected. Conversely, if this number of triple similarities,  $A$ , is the result of coincidence, the number of coincidences between Indo-European and Uralic, Indo-European and Altaic, and Uralic and Altaic must be close to  $A$ . This figure is several times greater than the actual number of such coincidences. Thus, by virtue of its own absolute size, it attests to the falsity of the initial premise. The reader can

make analogous calculations for four, five, and six of the six proto-languages under consideration; in each case, the actual number of similarities between three, four, five, and six compared proto-languages will be considerably greater than the size expected as a result of coincidence. Obviously, the distribution of similarities found cannot be explained as coincidence, but is motivated: such a distribution shows that the six proto-languages under consideration are linked by a linguistic relationship.

This conclusion could hardly be refuted by the assumption that, for a sufficiently distant period of time, one can postulate the borrowing of linguistic elements that are not usually borrowed in known languages: names of elementary actions, parts of the body, pronouns, several word-formative and morphological elements. The motivated character of the similarities in the six proto-languages in this case could be explained by borrowing. Actually, one can assume that individual elements from the above list of the most common elements in a linguistic structure were borrowed. But the examples given in this work show that in each proto-language there are dozens of elements covering all areas of linguistic structure that are similar to analogous elements in compared proto-languages. Moreover, despite the distant relationship of the six proto-languages, in the majority of the examples, several of the most stable systems of morphemes that are identical in origin are retained (primarily the systems of personal, demonstrative and interrogative pronouns and systems of substantive inflections). Borrowing on such a scale would practically signify the borrowing of an entire linguistic structure, and its transition to a new language. This brings us, once again, to the conclusion that the proto-languages in question are genetically related.

# COMPARATIVE-PHONETIC TABLES

Compiled by Vladimir Dybo

## I. Nostratic Consonants

### Stops

NOSTRATIC	AA	Kartv.	IE	Uralic	Drav.	Altaic
<u>initial inter-voc</u>						
pʃ-*	p	p, p	p	p-	p-	pʃ-
-pʃ-	p	p	p	-pp-~-p-	-pp-~-v-	-p-~-b-
p-	p <sub>1</sub>	p <sub>1</sub> (p~b) <sup>1</sup>	p~b <sup>1</sup>	p-	p <sub>1</sub> -(p~v-)	p-
-p-	p <sub>1</sub>	(p~b) <sup>1</sup>	p~b <sup>1</sup>	-p-	-pp-~-v-	-b-
b-	b	b	bh	p-	p-	b-
-b-	b	b	bh	-w-	-?***--v-	-b-
tʃ-	t <sup>1</sup> (t) <sup>2</sup>	t	t	t-	t-	tʃ-
-tʃ-	t <sup>1</sup> (t) <sup>2</sup>	t <sup>1</sup>	t	-tt-~-t- <sup>3</sup>	-t(t)- <sup>3</sup>	-t-
t-	t	t	d	t-	t-	t-
-t-	t	t	d	-t-	-t(t)- <sup>3</sup>	-d- <sup>3</sup>
d-	d	d	dh	t-	t-	d-
-d-	d	d	dh	-ð-	-t(t)- <sup>3</sup>	-d-
k-	q(k) <sup>2</sup>	k	k̂,k,kʷ	k-	k-	k'-
-k-	q	k <sup>1</sup>	k̂,k,kʷ	-kk-~-k- <sup>3</sup>	-k(k)-	-k-~-g-
k-	k	k	ḡ,g,gʷ	k-	k-	k-
-k-	k	k	ḡ,g,gʷ	-k-	-k(k)-	-g-
g-	g	g	ḡh,gh,gʷh	k-	k-	g-
-g-	g	g	ḡh,gh,gʷh	-ɣ-	-:ð-	-g-

\* The dash indicates the absence of a vowel in the given position.

\*\* Henceforward, the sign (?) denotes that the expected reflex is not determined for a given configuration.

<sup>1</sup> In Kartv. and IE, the reflexes of Nostratic p are found to be unstable.

<sup>2</sup> In Afro-Asiatic, glottalization occurs regularly in non-lexical morphemes, roots containing p as the second consonant, and sporadically under other conditions still not clear.

<sup>3</sup> The reflexes in post-consonant position are the same as in initial position

# Sibilants

## NOSTRATIC

		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
s-		š	s	s	ś-	c-	s-
	-s-	š	s	s	-s-	-cc--c-	-s-
ś-		š	s <sub>1</sub>	s	s-	c-	s <sub>1</sub> -
	-ś-			s	-s-	-?-~c-	
š-		š	š	s	š-		[s <sub>1</sub> -]*
	-š-	š	š	s	-š-	-cc--?-	-s <sub>1</sub> -
z- <sup>4</sup>		š	z	s	s-	c-	ž-
	-z- <sup>4</sup>						

# Affricates

## NOSTRATIC

		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
č-		š	č	sk̂, sk, skʷ	ś-	c-	[č-]*
	-č-	š	č	-s-	-ś-	-c-	
c-		s	c	sk̂, sk, skʷ	ś-	c-	č-
	-c-						
ž-		z	ž				ž-
	-ž-						
č-		š		sk̂, [sk, skʷ]	ć-	c-	č-
	-č-		č <sub>1</sub>	-s-	-ćć-	-cc--c-	-č-
ć-		s	c <sub>1</sub>	sk̂, sk-	ć-	c	č-
	-ć-	s	c <sub>1</sub>	-s-	-ć-	-cc--c-	-č-

<sup>4</sup> "The question of reconstructing a voiced sibilant corresponding to \*ś should probably remain open. Such a phoneme... appears in a few forms in Kartv. (-l). Only one has a correspondence in AA (where, as usual, we have š): Kartv. \*mz<sub>1</sub>e 'sun' ~ AA \*mš, šmš (redup. \*mšmš)." (From the author's material for a comparative grammar.)

\*In square brackets, probable but unattested reflexes are given.

# Affricates (continued)

NOSTRATIC		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
ʒ-		d	ʒ₁			c-	ʒ-
	-ʒ-	d	ʒ₁	-sd-(?)			
č-		t(>ɕ~t)	č	st-	č	c-	č-
	-č-	t(>ɕ~t)	č	-s-	-čč-	-c-	-č-
č-		t		st-	č-		č-
	-č-	t	č		-s-	-č-	-č-
ʒ-		d	ʒ	st-	č-		
	-ʒ-	d			-č₁-		-ʒ--d-

# Laterals

NOSTRATIC		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
ʃ-		ʃ	ʃ	s	ʃ-(~ʃ-)	c₁-	s₁-
	-ʃ-	ʃ	ʃ	s	?-ʃ-(~ʃ-)	-c-(?)	
λ-					δ'-		d-(?)
	-λ-	l	l	l	-δ'-	-t₁t--~t-	-l-

# Postvelars

NOSTRATIC		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
q-		q	q	[k̠, [k, ɰk]]	k-	k-	k-
	-q-	q	q	[k̠], k, [kɰ]	-kk-	-kk--~k-	-k-
q		q	q	[h̠], h, [hɰ]	θ-	θ-;*	θ-;
	-q-	q	q	H	-k-	-k-	-k--~g-
-g-		g	γ	[h̠], h, hɰ		θ-;	θ-;
	-g-	g	γ	[h̠], h, hɰ	-γ-	-iθ-	-:θ-

\* Here and below, the sign : denotes the lengthening of a vowel represented by the preceding dash.

# Pharyngeals and Laryngeals

NOSTRATIC		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
h-		h		h			θ-
	-h-	h	χ	h			
ʕ-		ɛ	h>θ			θ-:	θ-:
	-ʕ-	ɛ	h,θ	ɦ	-k-(?)	-k-(?)	-:θ-
ʔ-		ɔ	h>θ	ɦ, h, [hʁ]	θ-	θ-	θ-
	-ʔ-	ɔ	h,θ	ɦ, [h, hʁ]	-:θ-		:θ-
h-		h		ɦ, h, [hʁ]		θ-:	
	-h-	h		ɦ, h, [hʁ]			

# Liquids

NOSTRATIC		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
j-		j-	j-, θ- <sup>5</sup>	j-	j-	j-, θ- <sup>5</sup>	j-
	-j-	j		j	j-	-j-	-j-
w-		w	w	ɥ	w-	v-, θ-	(b-?), θ-
	-w-	w	w	ɥ	-w-	-v-	b, θ, (v)
r-		r	r	r-	r-	n-	[l-?]
	-r-	r	r	r	-r-	-r-, -r- <sup>6</sup>	-r-
	-r-	r	r	r	-r-	-r-	-r-
l-		l	l	l	l-	n-	l-
	-l-	l	l	l	-l-	-l-	-l-
ʎ-		l	l	l	ʎ-	t-	l-
	-ʎ-	l	l	l	-ʎ-	-l-	-l-
	-ʎ-	l	-r-:, l-	-l-	-ʎ-	-l-	-ʎ-

<sup>5</sup>In Kartv. and Drav., -j- is lost before e, as is expected.

<sup>6</sup>In Drav., r > r in the position before the (now lost) Nostratic second-syllable front vowels.

# Nasals

## NOSTRATIC

initial inter-voc

		AA	Kartv.	IE	Uralic	Drav.	Altaic
m-		m	m	m	m-	m-	m-
	-m-	m	m	m-	-m-	-m-	-m-
n-		n		n	n-	n-	
	-n-	n	n	n	-n-	-n-, -ŋ-	-n-
ñ-					ñ-	n-	ń-
	-ñ-	n	m(?)	n	-ñ-	-ŋ-, -tt-	-ń-
ń-		n		ɲ, n-	ń-		ń-
	-ń-	n			-ń-	-ŋ-(?)	-n-(?)

## II. Nostratic Consonantal Clusters (with sonants<sup>7</sup>)

### Sonants with Bilabials

#### NOSTRATIC

-CS-\* -SC-

		AA	Kartv.	IE	Uralic	Drav.	Altaic
	-Sp-						
	-Sp-	-Sp-	-Sb-Sp-	-Lp-, Nb-		-Sp-	
	-Sb-						
	-Sb-(-rb-)	-rb-	-rb-	-rp-	-rp-	-r-	-rb-

### Sonants with Dentals

#### NOSTRATIC

-CS-\* -SC-

		AA	Kartv.	IE	Uralic	Drav.	Altaic
	-St-(-Nt-)				-Nt-		-:t-(?)
	-St-(-Nt-)				-Nt-		-d-(?)
	-Sd-(-Nd-)			-Ndh-	-Nt-	-ŋt-	-nd-

<sup>7</sup>Laryngeals, pharyngeals, sibilants, and, possibly, sibilant affricates could form clusters not only with sonants, but also with stops in Nostratic; pharyngeals definitely formed clusters with both groups. However, our material is too scarce to be presented in a table format.

\* The following symbols are used in the table. C-consonant, S-sonant, N- nasal sonant, L-liquid sonant, : denotes lengthening of a preceding vowel



### Nasals with Back Consonants

NOSTRATIC	AA	Kartv.	IE	Uralic	Drav.	Altaic
-CS-* -SC-						
	-nk-		-nk-	-ŋk-	-ŋk-	-ŋ-
	-nk-		-ng-	-ŋk-	-ŋk-	
	-ng-	-m-	-m-	-ŋ-	-ŋk-	-ŋ-

### Liquids with Back Consonants

NOSTRATIC	AA	Kartv.	IE	Uralic	Drav.	Altaic
-CS-* -SC-						
	-rk-		-rk-			
	-rk-	-rk-	-rg-			
	-Lg-	-Lg-	(*rg>)-rg-	-rk-(lγ)	(rg>)-ir-	

### Sonants with Postvelars

NOSTRATIC	AA	Kartv.	IE	Uralic	Drav.	Altaic
-CS-* -SC-						
	-Sq-	-S-q-	-Sq-	-Sk-		-Sk-
	-Sq-	-S-ŋ-	-Sq-(?)	-S-H-	-SS-	-:S-
	-Sg-	-S-ğ-		-Sγ~γS-	-:S-	-:S-
	-:S-					

# Sonants with Pharyngeals and laryngeals

NOSTRATIC	AA	Kartv.	IE	Uralic	Drav.	Altaic
-cs- -sc-						
-hs	-h-s-		-H-S-		-S-	-S-
-s-h-	-S-h-	-S <sub>χ</sub> -~χ-S-	-S-H-	-S-	-SS- (-S-)	-S-
-ʃS-	-ʃ-s-	-iS	-H-S-	-iS-	-iS-	-iS-
-Sʃ-	-S-ʃ-	-S-				-iSg-
-ʔS-	-ʔ-s-	-S-			-S-	-S-
-Sʔ-	-S-ʔ-	-S-	-S-H-		-S-	
-hS-	-h-s-		-H-S-	-S-	-iS-	-iS-
-Sh-	-S-h-	-S-		-iS-	-iS-	-iS-

# Clusters containing j and w.

NOSTRATIC	AA	Kartv.	IE	Uralic	Drav.	Altaic
-cs- -sc-						
-jw-			(R̄)-u-	-jw-	-v-	-Vj-b
-jl-	(j)-l-		(R̄)-l-		-i-l-	-Vj-l-
-jr-	(j)-r-		(R̄)-r-		-i-r-	-Vj-r-
-rj-	-r-j-		-r-	-rj-	-i-r-	-i-r-
-jn-	(j)-n-		(R̄)-n-(>j,n)	-jn-		
-jñ-			(R̄)-n-(<n ?)	-jñ-	-i-n-	
-wd-	(w)-d-		-u-dh-	-wδ-	-i-t-	

### III. Nostratic vowels of a first syllable.

#### a) East Nostratic Vocalism

East Nostratic	Uralic	Dravidian	Altaic
*a	a	a	a
*o	o	o/a	o
*u	u	u	u
*ä	ä	a	ä
*e	e	e	e
*i	i	i	i
*ü	ü	u	ü/ö

#### b) Nostratic vocalism as reflected in the West Nostratic languages.

Nostratic	East Nostratic	Afro-Asiatic	Kartvelian	Indo-European CVC	Indo-European KV(C)	Indo-European CVS
a	a	CC	a, c ~ Ø	C-C <sup>8</sup>	K-(C)	C-S
o	o	CwC-CC- <sup>8</sup>	we, wa~(u)	C- <u>u</u> -C	K <sub>u</sub> -(C)	C-S
u	u	CwC-CC-	we, wa>o ~u (>Ø)	C- <u>u</u> -C	K <sub>u</sub> -(C)	C-S
ä	ä	CjC-CC-		C- <u>i</u> -C	$\tilde{R}$ -(C)	C-S
e	e	CjC-CC-		C- <u>i</u> -C	$\tilde{R}$ -(C)	C-S
i	i	CjC-CC-		C- <u>i</u> -C	$\tilde{R}$ -(C)	C-S
ü	ü	CwC-CC-		C- <u>u</u> -C	K <sub>u</sub> -(C)	C-S

<sup>8</sup>In IE the dash denotes the members of the alternating row (e or o or Ø), distributed according to the rules of the Indo-European stem. In Afro-Asiatic the dash denotes the spreading of the original root.

# THREE ENTRIES FROM THE *NOSTRATIC DICTIONARY*\*

Vladislav Illich-Svitych

8. **bari** 'to take': Afro-Asiatic **br-** 'to seize, catch' ~ IE **bher-** 'to take, bring, carry' ~ ? Dravidian **per-** 'to pick up, gather' ~ Altaic **bari-** 'to take into one's hands'.

AA || Semitic: Akkadian (Babylonian) **b'r** (pret. **-bār**) 'to catch', **bā'iru** 'fisherman' probably a secondary development from original **\*br**, cf. Mehri, Shawri **btr** (< **\*t-br**) 'to fish' (the **ʔ** in Soqotri **bʔr** 'to fish' is probably secondary; cf. Leslau JAOS 82.2). || Berber: Tuareg **aber** (pret. **-uber**) 'to seize by the handful'; **-b-** < **\*-bb-** < **\*w-b-**, cf. Taureg **e-häre** 'goods, property, cattle' without prefixal **w**, which caused gemination and preservation of **-b-** (in **e-häre**, **h** < **\*-b-** with weakening, as in those cases described by Beguinot RANL 33, 186-199) || Cushitic **\*brj**: Beja **bari** 'to get, gather, have control'; Saho (Irob, see Plazikowski-Wagner ZDMG 103, 381) **bar-** 'to seize, hold', Afar (Tajurah, see Lucas JSAfr 5, 198) **ber-** 'to carry away'. || Chadic: Ngala (the Kotoko group) **birre** 'seize'. Cf. Rossler Oriens 17, 215.

IE || OI **bharati**, Avestan **baraiti** 'he carries'; OI **bharas** 'a catch' || Arm. **berem** 'I carry, bring' || Phrygian **ab-beret** 'he brings' || Greek **ἔρρω** 'I carry' (Mycenean 3rd sg. pres. **pe-re**, see Morpurgo 240) || Albanian **bie** (< **\*bherō**, cf. the imperative **bierë**) 'I carry, bring' || Latin, Oscan **fer-** 'to carry' || OIr. **biru** 'I carry' || Gothic **bairan** 'to carry, bring' || OCS **berq** (inf. **bərati**) 'I take' || Toch. AB **pär-** 'to

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\*The entries are from volume 1 of *Nostratic Dictionary* (*Opyt sravneniia nostraticheskikh jazykov (semitokhamitskii, kartvel'skii, indoevropskii, ural'skii, dravidiiskii, altaiskii)*, vol. 1 (Moscow Nauka, 1971)). The translation for entries 8 and 32 was first published in *General Linguistics* 27.1 (1987) 36-7. For references, see *Nostratic Dictionary* vol. 1 107-46.

bring, carry'. Cf. Pok. 128-132 (Pokorny's formations with the meaning 'to give birth to, descendants' represent an originally different root – see #32). In light of external comparison, the meaning 'take' in Slavic, usually considered an innovation is revealed to be archaic. From this meaning the IE 'bring' → 'carry' most likely developed.

? Dravidian: 'pick up, gather' || SDrav. \*perukk-: Tamil Malayalam perukku, Toda per̥k, Kodagu por̥k- || Telugu pezipi, peḷḷu || CentralDrav.: Kolami petk-, Najki pett-, Parji ped-, Gadaba (Salur) piḷ-, Gondi (Adilabad) per-, Konda per-, Kui pebg- (< \*peg-b-) || Kurux pes- || See Burrow-Emeneau, 393.

Altaic || Turkic \*bary-: OTurkic, OÜygur barym 'property' – Azerbaidzhan baryn-, (Gazax) barym- 'to derive profit, obtain advantage'; OTurkish (TS 2,104) baryn- 'obtain for oneself means for existence', Turkish (Edirne) bary- 'to worry, to guard'; MHung. barom, OHung. barum 'cattle' (← 'property') borrowed from OBulgar (Gombocz BTL40-41) || Mong. 'take with the hands, seize' (and latter 'to present to') MidMong., Lit-Mong., Ordos, Khalkha bari-, Dagur bari-, Baoan vār-, Kalmyk bār-; Moghul bari-; see Poppe Mong. 26, Zirni 89 || Cf. Ramstedt KW 38 (where, as in Ram. 56, there is the assumption of relationship between Mongolian words and Turkic \*barṇak 'finger'); the semantic development in the Turkic languages was 'take' → 'obtain (property)'.

Cf. Ramstedt JSFOu 53 fn. 1, 23, Dolgopolsky 12 (IE ~ Alt.). The original meaning 'take' is preserved in Altaic, Dravidian and partly in IE. In Dravidian we apparently see the umlautization of \*a > e in the first syllable, influenced by the loss of the front vowel of the second syllable in position after ɾ (as in Drav. \*eɾ- 'to rise' < \*Hoɾä, #116).

32. **bVrV** 'baby, child': Afro-Asiatic **br** 'child' ~ ? Kartvelian **ber-** 'child' ~ IE **bher-** 'child'.

AA || For Semitic names of a child we ought to reconstruct suppletive forms with **r** in the singular and **n** in the plural: sg. \***bir** 'son', \***bir-t** 'daughter' ~ pl. \***bin** m., **bint** f. The archaic correspondences are preserved in Sarabic (OSarabic **brw** m.sg. ~ **bn** pl.; Shawri sg. **ber** m., **bint** f. ~ pl. **ine**, **unt** < \***bne**, \***bnt**; Mehri sg. **ber** m., **bort** f. ~ pl. **bīt**, **bant**) and Aramaic (Biblical Aramaic sg. m. **bar** ~ pl. constr. **banī** [actually **baney**]; Egyptian-Aramaic sg. m. **br** ~ pl. **bn-**; Mandaean sg. **bra** m., **brat** f. ~ pl. **bnia** m., **bnat** f.; Urmian sg. **bar** m., **bra** f. ~ pl. **bne**). The form with **-n-** (plural by origin) is generalized in Canaanite (Ugaritic **bn**, OHeb. **bēn** 'son'; Ugaritic **bt**, OHeb. **bat** 'daughter' < \***bint**) and Arabic (?**ibn** 'son', **bint** 'daughter'). It is probable that the Semitic verb \***br-** 'to give birth to' → 'to create' reflects a denominative formation (similarly, \***bnj** 'to create, build' from \***bin**): OSarabic **br?** 'to build, do', Shawri **buri**, Mehri **bīru** (impf. **-brow**), Soqotri **bere** 'to give birth to'; Aramaic, OHeb. **br?** 'to create'; Akkadian \***br-**: (OBabylonian) **bāru** (pret. **-burru**), (OAssyrian) **buāru** (pret. **-būr**) 'to appear, arise, be constant' || Berber: Tuareg **abaraḍ** 'boy', **tabaraḥ** f. (< \*-**baraḍ-t**) 'girl' (\***brḥ**) || Cushitic: Saho (Irob) **bāṇa**, (Assaorta) **bālā**, Afar **bālā** 'child'; Sidamo (Moreno) **beto**, Darasa **belti** 'son' (Darasa **belto** 'daughter'); Haruru **bušo**, Kaffa **bušō**, Bworo (Beke) **bušō** (š < \*-**l-t-**). The proto-form in Cushitic was probably \***brḥ** (or \***blḥ** ?), as in Berber. || CF. Reinisch Afar 829; Gesenius 113, 899, 103; Leslau (Soq.) 95, Moreno (Sid.) 208.

? Kartvelian: Zan: Chan **bere** (probably < \***ber-ja-i** with an archaic diminutive suffix andumlautization of the expected Zanian **a** < \***e**) 'child, son'; Megrel **ber-** as a component of the surnames **Beria**, **Berija**, **Gigi-beria**. || The suggestion (Chikobava, 19-20) that the Zanian form is borrowed from the Veynakh languages (North-Central

Caucasian) is hardly convincing (compare Chechen *bēr*, Ingush *ber*, Bats *bader* 'child'). This hypothesis is challenged by the areal of the Zanian word (for the most part *Chan*, i.e., South Zan) as well as the relic quality of the Megrelian stem *\*ber-*, supplanted by the transparent deverbative derivative of *\*šew-* 'to give birth to' (Megrel *skua* 'son' < *\*m-šw-e*; a different single stem derivative *\*šw-il* in Zan carries a notion of endearment: *Chan skir*, Megrel *skī-*). Cf. Chikobava 21-22, Klimov 139, 217.

IE || Alb. *bir* (< *\*bhg-*) 'son' || Olce. *burr* 'son'; Olce., OHG *barn* 'child' || OLit. *bernas*, Latv. *bērn*s 'child' || In IE the stem *\*bher-* 'child' was apparently contaminated with *\*bher-* 'to take – to carry' (see #8). This contamination was facilitated by the possibility of a semantic shift 'to carry' → 'to bear fruit, be pregnant' → 'to give birth to', and is reflected in such forms as Arm. *ber*, Gk. *φέρμα* 'fruit', Mlr. *birit* 'sow', Gmc. *\*beran* 'to carry, bring' and 'produce, give birth to'. Cf. Pokorny 128-132 (where no attempt is made to separate stems with the meaning 'child' and 'carry').

Cf. Möller 34 (Semitic ~ IE), Trombetti 370. The Afro-Asiatic data indicate the originally nominal nature of the stem.

157. **kamu** 'to seize, to squeeze': AA *km-* 'to seize, take, squeeze' ~ IE *gem-* 'to seize, take, squeeze' ~ Uralic *kama-l* / *koma-r* (< *\*kamo-*) 'handful': Dravidian *kam* 'to seize, take, hold' ~ Alt. *kamu-* 'to seize, take, squeeze'.

AA || Sem.: Akkad. *kmj/w* 'tie up (a captive, etc.)', *kam-tu* f. 'oppression, need'. An extension of original *\*km-* is probably represented in Sem. *\*kmš* (> *qmš* and *kms* with assimilation): Aramaic, Heb. *qmš* 'to take a handful', Akkad. (OBab.) *kms*, (Mid. Assyrian) *kmš* 'to gather, collect'; see further (*\*kmś* ?) Arabic *kmš* 'to seize' / *qmš* 'to pick up', Akkad. *kmš* 'to gather'. See Soden AW

431. || Berber: Tuareg *ekmem* 'to squeeze', *ekmu* (preterit *-kma*) 'to cause suffering', *met* 'to gather' (\**km-*). || ? Central Cushitic: Xamir, Dembja, Avija *kim* 'personal property, cattle', Bilin *kemā* 'cattle', Kuara *kemam* 'to possess' (probably from 'to seize, to capture'); Sanije (S. Cushitic) *kami* 'to receive'. Cf. Reinisch Bil 220, Damman ZES 35,232. || Chadic \**km*: Hausa *kāmá* 'to catch'; Musugeu *kaw* 'to seize'; Gidar *gama*, Masa *čum* 'to take'. || See Greenberg 61, Rössler ZAss 50, 133.

IE || Arm. *čmlem* 'I squeeze' (suffix *-el*, as in Celtic and Germanic: cf. Mann Arm.11). || Grk. (Homeric) *γέντρο* 'he took, seized' (< \**gem-to*) || Mlr. *gemel* 'fetters' || OSwd *kumla* 'to press (together)' || Lit. *gūmulas* 'lump', Ltv. *guņt* 'to seize, to attack'; OCS *žьmъ* (inf. *žęti*) 'I squeeze', Ukr. *žmenja* 'handful'. || See Pokorny 368-9.

Uralic || Finnish *kahmalo* (and with metathesis *kamahlo*), Vepsian *kahmol*, Livonian *kōmal* 'handful from two palms'. In the majority of Balto-Finnic languages we have a secondary *-h-* which possibly developed in connection with a change in archaic auslaut, as in the structurally analogous Fin. *ahmu* < \**amo* (See Dict. #124) and which is supported by analogy with the stem *kahte-* 'two'. A more archaic form is most likely preserved in Fin. dial. *kamalo*, Estonian *kamal* || Saami (Northern) *goabmer* 'handful' || Mordvin (Moksha) *komâr*, (Erzja) *komoro* 'full handful' || ? Komi *kamyr* 'full handful' (the preservation of \**a*, as in a number of other instances in Permic, cf. Lytkin 176-177) || Samoyed: Enets *xammara* 'hand' || Cf. SKES 140, Collinder 22, Setälä JSFOu 305,54. The correlation of \**a* vocalism in Balto-Finnic, \**o* in Mordvin and Saami indicates an original form with labial \**-o* in the second syllable which in some languages caused labialization of the root \**a* during the period when similar structures were eliminated (cf. Dict. #124, #281).

? Dravidian || Telugu *kamucu* 'to hold, seize' || Malto (Droese) *kam-* 'to gather (one by one)', *kamj-* 'to earn' || These formations probably



should be separated (in spite of DED 94, Krishnamurti 325) from Drav. kavā- 'to seize' (see Dict. #190), especially in view of the Malto data, where the transition of -v- > -m- is not seen.

Altaic || Turkic \*kam-a-, \*kam-ty: Uighur qama- 'take prisoner, surround'; Kirghiz kama- 'to surround, to arrest', Karakalpak., Tatar kama- 'to drive into a pen, to surround'; Karakalpak. Nogai kamty- 'to seize, grab' || Writ.Mong. quamu-, Khalkha, Kalmyk xamă- 'to gather, pick up'. Mong. \*qam-tu 'together' (see Poppe Mong. 102) apparently belongs here < 'gathered together' (adj. in -tu; for the semantics cf. below the Orok forms) || Tung. \*kama- / \*kamu-: Nanaj kama-le- 'to press onto, to forbid', Olcha kama-lu- 'to forbid', kama-lžu- 'to press', Orok kamu-i- 'to take into one's arms, to enclose together' (cf. kamu-r 'into one pile'); Evenki kama- 'to refuse help; to oppress', Even kam- 'to grate one's teeth' || ? Korean kam- 'to close (one's eyes)' (< to squeeze'; otherwise Ramstedt SKE 91) || See Malov PDP 410, Ramstedt KW 164, Vasilevich 190. Mong. and Tung. (Orok) indicate Altaic \*kamu- (Tung. \*kama-, perhaps, is the result of secondary assimilation). The original meanings are 'to seize, take, squeeze'.

Cf. Illich-Svitych PSG 25 (IE ~ Alt). AA, IE and Alt. reflect \*k in anlaut. The vocalism of the first syllable \*a is preserved in Uralic, Dravidian, and Altaic, and is supposed by IE data (velar \*g-). Uralic and Altaic indicate a labial vowel in auslaut. Only derivative nominal forms of the archaic verbal stem are preserved in Uralic (with the semantic development 'that which seizes' > 'handful').

Translated by Mark Kaiser

A NOSTRATIC WORD LIST:  
RECONSTRUCTIONS BY V. ILLICH-SVITYCH

Translated and Arranged by Jim Parkinson

There are 607 Nostratic words in Illich-Svitych's foundation article 'Materials for a Comparative Dictionary of the Nostratic Languages' (1967), but only 378 words have yet been published in the *Nostratic Dictionary* volumes (1971- ), and only eight beginning with *ɾ* to *z* (or *ʒ*). The Nostratic words from both sources are here combined and alphabetically sequenced; unreconstructed words from 'Materials' are included, with only three important words from other sources. In all, there are 977 entries, which comprise about 690 independent words.

In the tabulation below, the first of four columns, 'N. Dict.', gives the number locating the words in the *Nostratic Dictionary*. The I-S('67) column gives the page (between 330 and 373) and sequence on that page of *Ėtimologijâ 1965* (published in 1967). The third and fourth columns give the Nostratic word, arranged in alphabetical order of phonemes (ʌ is last), and its English meaning.

Some examples:

N.Dict.	I-S('67)	Word	Meaning
[64	340-2	d/ä/wʌ	to blow
64		dEwHi	to shake, to blow

This means 'd/ä/wʌ' (where the phonetic value labeled 'ä' is questionable) is the second entry on page 340 of Illich-Svitych's 1967 paper; it means "to blow" and corresponds to #64 in the *Nostratic Dictionary*. The next line has improved the phonemes of #64 to 'dEwHi' (Where E could stand for ä, e, or i; and H is an undetermined laryngeal or post-velar, such as h or q), and the definition has been elaborated.

N.Dict.	I-S('67) Word	Meaning
159	kurΛ (see karΛ)	crane

This means karΛ is a more likely reconstruction than kurΛ.

[136 340- 7 [ɪdä R (ʔitä) to eat

This entry indents '[' to mean idä is not a reconstruction, but a word from one of the Nostratic daughter languages (in this case Altaic [Al]) with one or more cognates among the other branches. The translation, however, is that of the Nostratic root – ʔitä in the *Nostratic Dictionary* (see #136) – not necessarily the same as the entry word's translation.

The definitions are refereed between the *Nostratic Dictionary*, Vol. 2, and Mark Kaiser (to be published), commonly preferring the latter, but sometimes modifying both. Some attempt to translate the Russian consistently has been made. Verbs are sometimes marked v.t., v.i., or v.t./i., to designate transitive and/or intransitive.

Note that words beginning with vowels are cited at the end (according to the *Nostratic Dictionary*, such words began with ʔ-, ɣ-, ɣ- or h- in Nostratic.) Note that the ɣ in Illich-Svitych's 1967 paper corresponds to ɣ in his *Dictionary*. Glottalized consonants are cited as k', q', c' etc., where Illich-Svitych had k̚, q̚, c̚, etc.; Illich-Svitych's p' is given as p̚. For other phonetic symbols, see M. Kaiser's list in *Reconstructing Languages and Cultures*, p. 175.

# ABBREVIATIONS

A	— Altaic
AA	— Afro-Asiatic (Hamito-Semitic)
D	— Dravidian
IE	— Indo-European
K	— Kartvelian
U	— Uralic

1p first person	fmt = formant	n = noun
adj = adjective	freq = frequentative	part = particle
comp = comparative	int = internal	pers = personal
conj = conjoining	intens = intensifying	pl.n = plural noun
deg = degree	interr = interrogative	pron = pronoun
dem = demonstrative	iter = iterative	rel = relative
f = female	loc = locative	v = verb

## CORRECTIONS TO KAISER'S (1989) LIST OF NOSTRATIC ROOTS

1. extremity not *extremity*; twice s.v. duλΛ
2. shiny not *shiney*; s.v. gɪl/H/Λ
3. ʕ/e/bU not ʕ/e/bu; s.v. {ʕ/e/bu}
4. #158 \*\*kanpΛ not #kanpΛ; s.v. kampΛ
5. 168 not 169; s.v. koj/H/Λ
6. \*\*kɑrʔ not \*\*kɑrʔ [s.v.]. It is a typo in N. Dict.; it should be #217 kɑrʔ
7. /k/ujΛ (not /kujΛ [s.v.]
8. #200 \*\*kErdΛ not #kErdΛ; s.v. kʌrdΛ
9. 349 not 331; s.v. najrΛ
10. 'pus' not 'puss'; twice s.v. səjΛ
11. /s/ujΛ- not /sujΛ-; s.v. SujΛ

N.Dict.	I-S('67)	Word	Meaning
[2	364-5	[bā- ʔ (baHΛ)	to bind
1		baHli (?)	wound(n.), pain(n.)
2		baHΛ	to tie to
[3	366-4	ba/k'Λ	to look
3		baK'a	"
[5	331-1	baI/g/Λ	to shine
4		baIʕ/u/	to swallow
5		baIq'a	to scintillate
[1?	331-7	baIΛ	to be ill
6		baIΛ	blind
	349-11	[ban- K	to wash
[30	364-2	bandΛ {bΛnt'Λ}	to bind
7		bara	big, good
8		bari	to take
[8	332-2	barΛ	"
	358-14	ba/ś/Λ	to make small
	363-4	b/ǝ/1Λ	bright / light
	337-6	bǝngΛ	head
9		berg/i/	high
10		be/rH/u	to give
[10?	338-9	berΛ	"
11		biĆa	small
12	369-6	bič'Λ	to break
[4	336-1	biIʕΛ {baIʕ/u/}	throat
13		biIwi	cloud
[13	351-12	biI(w)Λ	"
[14	345-9	biIΛ	to scream
14		biÍΛ	"
	369-4	birΛ	to flow
	340-13	bišΛ	bile / gall
15		bok/a/	to flee (run away)
[15	330-2	b/o/kΛ	to run
16		bolʔi	to grow (of plants)

N.Dict.	I-S('67)	Word	Meaning
[16]	347-6	bo1A	leaf
17		bongä	thick, to swell
[17]	333-6	bonk'Λ	to swell
18		bo'ä	brown, grey-brown
22		bor(H)Λ {see bur(H)Λ}	porous soil, dust
[18]	332-11	borjΛ	brown
	332-5	b/o/rwΛ	beam
[24]	344-1	borΛ-	to boil
[25]	345-13	[br AA	blood
(cf.5)	362-16	[brk'- K	to scintillate
19		buHi	to grow up, to arise
[19]	333-2	bu/H/Λ	to be
	336-11	bu/k'/Λ	to bend (v.t./i.)
20		bulΛ	sediment, lees, turbidity
	366-3	bulΛ	to mix
21		bura	to bore
[23]	332-12	bur(g)Λ	storm
22		bur(H)Λ	porous soil, dust
[22]	358-10	burΛ	dust
23		burΛ	snow (sand) storm
[26]	342-5	burΛ	to cover (from light)
[21]	363-1	burΛ	to bore
24		bu'ä	to boil (v.i.), to seethe
25		bük'a	to bend (v.t.), bent
26		büri	to cover
27		-bΛ (?)	suffix in names of wild animals
28	348-10	bΛgΛ	sufficient, excessive
29	340-1	bΛIHΛ	to blow, to inflate (v.t.)
30		bΛnt'Λ	to bind
	332-6	bΛrdΛ	ford
31		bΛrkΛ	knee
32	361-9	bΛrΛ	child

N.Dict.	I-S('67)	Word	Meaning
33		calu	to split, to cut
[33	360-2	calΛ	to split
[47	372-13	/c/arΛ	rough
	354-8	/c/olmΛ	loop
35		corΛ (see curΛ)	to drip
34		cujhΛ	thorn / prickly plant
[34	372-14	/c/uj(H)Λ	thorn
35		curΛ	to drip
[35	343-12	c/u/rΛ	"
	330-8	[cuttΛ D	to beat
36	357-3	cAtΛ (?)	to cover, put on (clothes) / sheild
37		c'äjhΛ	to twinkle
[37	348-6	c'(ä)jΛ	"
[53	360-11	c'arΛ	to cut
[40	367-9	c'urΛ	herd.
	370-6	c'AmΛ	to maim
[54	368-15	c'AmΛ	harsh(of taste)/astringent
	372-3	c'ArΛ	over / across
38	337-2	c'AwΛ (?)	to scream, to talk
39		Cali	to tie around, to tie to
40		CurΛ	herd (of wild animals)
41		čap'a	to beat, to chop
[41	361-13	/č/ap'Λ	to chop
[44	358-1	/č/elΛ	to jump
42		činΛ	to know
	343-13	/č/ip'Λ	to drip
	360-4	čitΛ	to split
	363-2	čohrΛ	bright / light
43		čuHΛ	to look
	369-2	čurΛ	to flow
[49	345-7	/č/ympΛ	crooked, bent
[42	343-3	čAnΛ	to know
[43	367-12	čAwΛ	to guard

N.Dict.	I-S('67)	Word	Meaning
	344-6	ć'abΛ	glue
44		ć'e1Λ	to jump
	341-3	ć'ΛwΛ	to burn
45		Ća	adj. and dim. formant
46		ĆaK'Λ	to tickle
47		ĆarΛ	hardened crust
48		-Ći	fmt. of freq. and iter. verbs
49		Ćimpa	curved, bent
[58	373-1	/č/a1/H/Λ	wide
	335-6	[č/i/ŋkă- U	to stick into
50		čiru	pus, slush
[50	336-6	čirΛ	to rot
	344-9	[čoky- A	to stab
	331-14	[čöck(Λ) A	great/big
[51	340-3	čun/k/Λ	smoke
51		čüngΛ	to smell (v.t.), odor
52		č'AdΛ	to beat
53		č'ArΛ	to cut
54		č'ämΛ	harsh (of taste)/astringent
55	361-2	č'ik'Λ	to cut
56		č'irΛ	to look after, to guard
57		č'ΛŋmΛ	to eat
[56	342-1	č'ΛrΛ	to care
[53	353-2	č'ΛrΛ	point
58		čalHa	wide
59		da.	loc. part.
60		daHΛ	intens. and conj. part.
[61	331-3	dakΛ	near
61		daKa	nearby
62		dalq/u/	wave(n)
63		danga	to cover
[63	355-13	dangΛ	"
[64	340-2	d/ä/wΛ	to blow



N.Dict.	I-S('67)	Word	Meaning
64		dEwHi	to shake, to blow
65		-di	suffix of past tense forms
66		didΛ	big
67		diga	fish
[67	362-8	digΛ	"
[75	344-3	d/i/yΛ	to put
68		dila	sunlight
[68	366-11	dilΛ	sun
69	342-15	diqΛ	soil
70		dIga	bright / light
71		duli	fire
[71	352-6	du1Λ	"
[74	336-3	du1Λ (?)	deaf
72	352-11	duλΛ	extremity
[73	349-2	dungΛ	to keep silence
	352-1	durΛ	to cheat
73		dÜnga	to be calm, keep silence
74		dUrΛ (?)	deaf
75		dΛʔΛ	to put
76		dΛwΛ	to be ill, to die
[76	365-6	dΛwΛ	(physical) weakness
	364-7	[ḍä/ḍ/wä U	spleen
[77	356-9	[ga- R	to receive
77		ga(HΛ)	to take, to receive
78		gara	thorny branch, thorn
[78	369-10	garΛ	to protrude
79		gändu	male
[79	362-13	gändΛ	"
[82	342-8	g/ä/rΛ	dawn
80		gäti	hand / arm
81		gedi (?)	nape of the neck
[81	342-2	gedΛ	back
	346-6	gep'Λ	light (weight)

N.Dict.	I-S('67)	Word	Meaning
82		gE/hr/a	dawn
[84	330-11	gil(H)Λ	to shine
83		gilΛ	sickly state, grief
[83	331-8	gilΛ	to be ill
84		gi/ʔ/hu	smooth and shiny
[83?	337-10	[glow- K	grief
[87	358-12	gobΛ	plain (level)
85		goHjΛ	sunlight, redness of sky / dawn
88		goŋrΛ	to look for
[90	330-1	gojrΛ	antelope
[85	342-7	gojΛ	dawn
[167	349-3	g/o/jΛ (?) (koja)	moth
86		golHA	heart
[94	343-14	golΛ	to roll
87		gop'a	hollow, empty
[95	337-15	g/o/ʔΛ	to burn
[84	335-12	guʔΛ	smooth
89		gu/nH/i	to think (about)
[89	339-12	g/u/nΛ	to think (deeply)
	352-3	gunΛ	to chop off
[92	336-8	gupΛ	to bend (v.t/i)
[87	358-7	gup'Λ	empty
90		gurHa	antelope, male antelope
91		gurΛ	to swallow
[91	335-15	gurΛ	throat
[239	341-11	gü1Λ	dwelling
92		güpʔ	to bend (v.t/i)
93		gUjRä	wild (beast)
94		gU1'Λ	round, ball
95		gUrΛ	burning coals / embers
[94	372-6	gΛ1Λ	skull
[86	364-9	g/Λw/1Λ	heart
96		galpa (?)	weak, feeble

N.Dict.	I-S('67)	Word	Meaning
97		gark'u (?)	to bend (v.i.)
	345-8	gorΛ	to scream
	364-1	gudΛ	to bind
98		guru	to flow, to pour
	[98 341-6	gurΛ	fluidity
	[96 365-8	/g/ΛlpΛ	weak
99		gΛmΛ	darkness, night
	[99 368-12	gΛmΛ	dark
	[97 336-10	gΛrk'Λ	to bend/be bent (v.t/i)
		363-5 gΛrΛ	(wild) pig
	[139 334-5	γa/k'/Λ	water
	[141 333-5	γ/o/ζΛ	branch
		352-14 γΛrΛ	eagle
100		hawΛ	to desire passionately
	[100 340-12	h/a/wΛ	to desire
		342-9 h/u/rΛ	to conceive (a child)
101		haju	to live, vital force
	[105 358-13	/h/angΛ	to open (wide) / gape
	[101 341-14	hujΛ	to live
		337-3 hΛwΛ	to talk
		360-8 [h]s' (?) AA	to tear
102		Ha	to become / be
103		Haja	to chase / to pursue
104		HalΛ	forward edge
	[123 354-11	/H/a1Λ	food
105		Hanga	to open one's mouth wide
	[125 340-5	[HenH- IE	to breathe
106		Henka	to burn (v.i.)
107		Herä	to collapse
108		Herä	male
	359-9	[Herdh- (?) IE	to grow
	370-15	[Heus- IE	ear

N.Dict.	I-S('67)	Word	Meaning
109		H/E/mi	to suck, to swallow
110		HEnPA (?)	navel
111		Hi	part. indicating past tense
	340-9	/H/indΛ	heat
112		Hirá	to drag, to pull
	[118 333-8	/H/o/k'/Λ	to see
113		HoK'i	point
114		Homśa	meat
115		HonĆa (?)	end, edge
116		Horă	to rise
117		HosΛ (?)	ash tree
	[343 352-8	/H/ot'Λ {qot'i}	fire
118		HuK'a	eye, to see
119		Huwa	flowing waters
120		HütΛ (?)	rest period
	[110 358-5	[Ĥenbh- IE	navel
121		?a	that, dem. pron. for a distant object
122		?a	fmt. of verbal constructions
123		?ala	food
124		?amu	morning, daylight
125		?anqΛ	to breathe
126		?arba (?)	to practice witchcraft
127		?aSa	fire
128		?ăla	part. of categorical negation
	[134	?e (?) {see ?i}	demonstrative pronoun
129		?e	negative particle
130		?ejΛ	to come
131		?elR	to live
132		?esR	to settle at a place (of nomads), to be at a place
133		?EmΛ	to seize, to take
134		?i	this, dem. pron. for a nearby object

N.Dict.	I-S('67)	Word	Meaning
135		ʔili	deer
136		ʔitā	to eat
[135	352-12	[ʔj] AA	deer
137		ʔaíʌ	to cross (a mountain)
138		ʔ/e/bu	female breast
139		ʔEK'u	water
140		ʔʌʌ (?)	to burn (an offering) to ashes
141		ʔʌʒʌ	branch
142		ja	which, interr. and rel. pron.
143		jaHU	to bandage, to gird
144		jamʌ (?)	water
[144	349-4	jamʌ	sea
145	364-17	jarʌ (?)	to shine (flash)
146		jʌnʌ	to talk
[143	356-13	jā/H/ʌ	belt, girdle
	346-7	jān/k/ʌ	ice
[147	350-11	jān/t/ʌ	to stretch
147		jānTʌ (?)	to stretch, to draw out
[130	357-4	je(Hʌ)	to come
148		jela	bright / light
[148	362-17	jelʌ	to scintillate
149		-jE	formant of optative
143		joHʌ {see jaHU}	to bandage, to gird
	347-8	ju/k/ʌ	to pour
150		-jʌ	suffix of denominal and deverbative adjectives
151		-jʌ	dim.-endearing suffix of nouns used in addressing
152		-j(ʌ)	affix of obl. form of pl.n.'s
153		jʌ- (?)	fmt. of the comp. deg.
[181	330-4	[kače-	to run
154		kalə (?)	vessel
[156	337-7	kaljʌ	bare
155		kalʌ	fish

N.Dict.	I-S('67)	Word	Meaning
156		kaíΛ	to peel, to skin
[156	354-13	/k/aíΛ	film
	372-12	[kama- U	husk
[158	338-6	kampΛ	lip
157		kamu	to seize, to squeeze
[157	370-16	kamΛ	to seize
158		kanpΛ	soft outgrowth (e.g. mushroom)
	332-1	kantΛ	to take
159		karΛ	crane (bird)
[80	362-4	k/ä/čΛ {gäti}	hand / arm
160		käjwΛ	to chew
161		kä/1H/Λ	to go, to wander
162		kälU	female relative by marriage
[161	332-7	kälΛ	ford
[162	363-7	kälΛ	female relative by marriage
	368-10	[kämä U	hard
[160	340-10	käwΛ	to chew
	361-1	kertΛ	to cut
163		kENΛ	to know
164	354-9	k/iH/Λ	to sing
[163	343-2	kinΛ	to know
165		kirHA (?)	old
[165	367-10	kirΛ	"
166		kiwi	stone
[166	343-10	kiwΛ	"
[183	335-7	/k/og(Λ)	to track / follow
167		koja	moth, caterpillar
[169	345-2	koja (?)	crust / bark / rind
168		kojHa	fat (adj.), healthy
169		kojHa (?)	skin, rind
[168	341-12	koj/H/Λ	fat (n.)
170	330-5	kojw/a/	birch
[170	330-5	kojwΛ	"
[171	351-11	kolΛ	to skin, to peel

N.Dict.	I-S('67)	Word	Meaning
171		koλΛ (?)	to skin
	356-3	komt'Λ	small cover (of vessels)
	356-11	k/o/ndΛ (?)	to spoil
	370-7	k/o/n/g/Λ	depth (hollow of armpits)
172		korΛ	anger, mental suffering
173		k0ʹi	lamb, sheep
	[217 345-1	[kōre U	crust / bark / rind
	[237 345-12	[kreu(H)- IE	blood
	[174 363-6	kudΛ	male relative by marriage
	[161? 332-8	[k'uily A	to wander
	[176 371-8	ku1Λ	cold
	[179 372-1	kuʹΛ	worm
	[184 352-13	[kuma- U	to turn over
	362-11	/k/umΛ	crumbly / porous
	[178 340-14	k/u/nΛ	woman
	358-4	[kupla U	bubble
	[185 335-11	ku/p/sΛ	to burn out
	[159 341-15	[kurke U {cf. γ/ArΛ}	crane
159		kurΛ {see karΛ}	"
	[186 362-15	[ku/ś/e- U	to fall down
174		küda	male relative by marriage
	[187 370-1	[/k/üdə- A	fog / mist
175		küjñA (?)	to bend at the joints, bone flexion
	[175 368-5	[küjñā- U	joint
176		kü1A	to freeze, cold (n.)
177		küʹä	lake, small reservoir
178		küni	wife, woman
179		küʹΛ	snake, worm
	[224 346-10	k/y/č'Λ	summer
180		kΛmΛ (?)	biting insect
181		KačΛ (?)	to struggle forward
182		KejΛ	to do

N.Dict.	I-S('67)	Word	Meaning
183		Koki (?)	to track, to watch
184		Kumä	overturned
185		KuPśa	to burn out(v.i.), to extinguish
186		Ku/s/i (?)	to fall
187		KünTĥ (?)	fog / mist
188		Küt'Λ	to bind
189		-k'a	diminutive suffix of n.'s
190		k'aba	to seize
	[219 345-5	/k'/ac'Λ	bone
191		k'ačΛ	man, youth
192		k'adΛ	to interweave (wicker)
	[192 368-1	k'adΛ	to build
193		k'aHPΛ	to chop, to dig
	[191 349-9	k'ajč'Λ	(young) man
	[209 362-9	/k'/ajwΛ	to dig out
	[210 335-8	/k'/a1Λ	high
	[208 341-1	/k'/a1Λ	to burn
194		k'aλa	to leave(v. i/t), to abandon
	[194 352-15	k'aλΛ	to abandon
	[211 361-8	/k'/a/n/Λ	to give birth to
190		k'apa {see k'aba}	to seize
	[195 366-14	/k'/ap'Λ	vessel
	[212 356-1	/k'/ap'Λ	to cover
	[190 371-1	/k'/ap'Λ	to seize
	[193 362-2	k'a/p'/Λ	to chop
195		k'ap'Λ	nape of the neck, head
	[214 334-1	k'ar(w)Λ	viscera (internal organs)
	[215 353-9	k'arΛ	hearth
	[213 372-7	/k'/arΛ	black
	[218 372-8	/k'/ašΛ	to scratch
196		k'äčä	to cut
	[196 360-10	k'/ä/čΛ	"
	[222 344-13	/k'/äp'Λ	hoof
197		k'ärΛ	to tie (tightly)



N.Dict.	I-S('67)	Word	Meaning
[221	336-14	[k'e1ä- A	to talk
198		k'e1Λ	to be insufficient
[198	351-8	k'e1Λ	necessary
[226	346-5	/k'/eñΛ	light (weight)
199		k'erjä	to scream
[199	342-11	/k'/erjΛ	to call
[217	344-15	/k'/erΛ	crust / bark / rind
[225	353-13	/k'/etΛ	to fall
200		k'ErdΛ	chest, heart
[228	334-10	/k'/il(k)Λ	(thick) hair
[229	364-8	/k'/inΛ	to be angry
	348-3	/k'/ir(H)Λ	crown (of a head)
[231	365-5	/k'/irΛ	to scrape
[230	343-9	/k'/i/rΛ	hoarfrost
201		k'/o/	post-positional intensifying and conjoining particle
[241	345-3	/k'/o/c'/Λ	box
[155	362-7	k'o1Λ	fish
202	345-15	k'o1Λ	round
[177	352-10	/k'/oʔΛ	lake
[242	355-9	/k'/omΛ	to devour
[173	373-5	k'orΛ	lamb
	360-12	k'o/t'/Λ	to cut
203		k'udi	tail
[203	371-6	k'udΛ	"
[238	334-7	k'ujnΛ	wolf
[233	355-11	/k'/ujΛ	to (stay at) rest
[239	361-4	/k'/u/1/Λ	clan
[235	351-9	/k'/u1Λ	to collapse
204		k'ula	secret (adj.), to steal
[204	368-7	k'ulΛ	secret
	346-1	k'/u/nΛ	marten (zool.)
[243	346-3	k'/u/pΛ	heap
[240	354-4	/k'/up'Λ	to foam

N.Dict.	I-S('67)	Word	Meaning
[234	338-4	/k'urΛ	to gnaw (of insects)
[244	345-4	/k'urΛ	short
[344	353-1	/k'urΛ {q'urΛ}	point
[236	365-4	/k'urΛ	to fasten
205	348-4	k'ut'Λ	small
	346-2	k'ΛbΛ	to bite
[200	364-10	k'ΛndΛ	heart
206		k'ΛrpΛ (?)	to gather fruit
207		K'a	part. inciting to action (with verbal forms)
208		K'ajla	hot, to burn (v.t.)
209		K'ajwΛ	to dig
210		K'aLi	to raise, to rise
211		K'anΛ	to give birth to, be born
212		K'ap'a	to shut, to cover
213		K'ar/ä/	black, dark-colored
214		K'arb/i/	abdomen, viscera/int. organs
215		K'arΛ	to burn (v.t.), to scorch (v.t.)
216		K'arΛ	rock formation (e.g. cliff), steep elevation
217		K'ar'ä	bark(n.) / crust / rind
218		K'as'Λ	to scrape, to scratch
219		K'aSΛ	bone
220		K'awingΛ	armpit / underarm
221		K'ä/iH/ä	tongue
222		K'äp'ä	paw
223		K'e	who
224		K'Eča	summer heat
225		K'etΛ	to fall
226		K'EřU	empty, light (weight)
227		K'ErΛ	horn
228		K'ila	stem / stalk, hair
229		K'in/u/	to be angry, to be jealous
230		K'irΛ	hoarfrost

N.Dict.	I-S('67)	Word	Meaning
231		K'irΛ	to scrape
232		K'o	who
233		K'oja	to (stay at) rest
234		K'orΛ	to gnaw, worm
235		K'ulΛ	to fall, to subside
236		K'ur1Λ	to interweave, to bind
237		K'urΛ (?)	blood
238		K'üjnΛ	wolf, dog
239		K'ülä	community, clan
240		K'üpä	to boil(v.i.), to swell up
241		K'UčΛ	wicker basket
242		K'UmΛ	to swallow, to devour
243		K'U/p/a	heap
244		K'UrΛ	short
245		K'Λ	directive particle
246		-1/a/ (?)	suffix of collective n.'s
[262	371-3	labΛ	to seize
[263	331-9	la/H/mΛ	swamp
247	346-11	lak'Λ	to lick
[264	351-5	lamdΛ	low
	355-3	lapΛ {see lapΛ}	flat
[256	355-3	lapΛ	"
	347-2	l/a/pΛ	to lick
[273	347-1	lašΛ	"
[266	350-14	lawčΛ	unfastened / loose
[267	347-7	läjΛ	to pour
248		-1A	suffix of denominative verbs
249		lAsL	to rub, to damage
	332-15	le	to be
[258	350-1	lejñΛ	soft
250		l/e/p'A (?)	spleen
251		lewdä (?)	to search for, to find
[251	358-17	lewdΛ	to search

N.Dict.	I-S('67)	Word	Meaning
252		lip'a	sticky
[252	347-4	lip'Λ	"
[270	347-5	lok'Λ	fox
[268	351-10	lop'Λ	to skin / to peel
[249	365-7	[los- IE	weak
[269	340-8	lubΛ	thirst
	358-16	/l/ukΛ	to destroy
	367-4	lu1Λ	to sleep
354		luŋge	snow
[354	366-6	luŋgΛ	"
253		-1Λ	adjectival suffix
[271	346-8	lAgΛ	to lie (repose)
	338-7	lApΛ	lip
[265	341-8	lAt'Λ	fluidity
254		íama	to knead / mash, to soften
[254	371-11	íamΛ	fragile
[255	351-6	ʔakΛ	foot / leg
255		ʔa/K'a	leg
256		ʔap'a	flat
	356-2	ʔäp'Λ (?)	to cover
257		ʔa	locative particle
258		ʔejna	soft, weak
259		ʔiwa	mud, silt
[259	338-5	ʔiwHΛ	mud
	366-8	ʔokΛ	to gather (-> to count)
[260	350-5	ʔon/k'Λ	to incline
260		ʔonK'a	to bend (v.t.)
[261	366-9	ʔu/k'Λ	to poke (v.t.)
261		ʔük'Λ	to pierce, to poke (v.t.)
262		LabΛ	to seize, to get
263		LaHm/u/	swamp
264		Lamd/i/	low, lowland
265		L/a/t'Λ	moist
266		Lawša	weak, limp

N.Dict.	I-S('67)	Word	Meaning
267		L/ä/jΛ	water, to pour (flow)
268		Lop'Λ (?)	peeled bark / rind, thin layer of plant material
269		LubΛ	to feel thirsty
270		Luk'Λ	small carnivore
271		LΛga	to lie (repose)
272		LΛhΛ (?)	to be ill
273		LΛšΛ	to lick
274		λa/mH/u	bird-cherry (tree)
[274	372-5	λo/mH/Λ	"
275		magu	bad
	342-14	magΛ	soil / earth
[280	331-13	magΛ	big
355		maHj/e/	to swing, to shake, to wave (rock)
356		maHjΛ	to lose strength, to weaken; to disappear, to perish
[276	339-6	[maj/δ/â U	tree
276	348-5	majλΛ	honey, sweet sap from trees
277		majrΛ	young male
278		malΛ	numerous, abundant
[278	331-12	malΛ	big
279		mana	to discontinue / stop, to detain (v.t.)
280		manga	strong, firm
281		manu	to think (about)
[279	357-1	manΛ	to stop
[281	339-10	m/a/nΛ	to think (about)
[292	349-7	[maŋ D	man
282		marja	berry
[282	373-6	mar(j)Λ	"
283	339-5	marΛ	tree
[277	373-4	marΛ	youth

N.Dict.	I-S('67)	Word	Meaning
[288	358-11	m/a/rΛ	spot
284		mʀ	fmt. with nominal function in relative constructions
285		-mʀ	suffix formant of the marked direct object
286		mʀLΛ	mountain
287		mʀnΛ	to remain in place, stand firmly
288		mʀrΛ	spot, dirty
289		mä	we, personal pronoun: 1st person plural inclusive
290		mä	prohibitive particle
[294	334-3	m/äh/řΛ	water
	371-7	măkΛ	hill
291		mălgı (?)	breast, udder
[291	338-3	mălgΛ	breast
292		mănΛ	man, male
[287	367-14	mănΛ	to stand
	350-4	măńΛ	to knead
293	331-5	m/ă/rΛ	to be ill, to die
294		măřă	moisture, damp
[297	353-12	mătΛ	to sense
295		mene (?)	to step
[357	357-7	mentΛ	to miss
357		menΛ	to miss (the mark), to pass by, to be futile, in vain; reckless; false, lying
296		meřΛ (?)	fat(n.), to smear with grease / fat
297		metʀ	to feel, to be / become conscious of
298		mEwΛ	water
299		mi	I, pers. pron. :1p. sing.
300		mi	what

N.Dict.	I-S('67)	Word	Meaning
	348-11	miɬʌ (?)	to pray (to God)
301		miñä	woman, female relative
	[301 363-8	miñʌ	(younger) f. rel. by marriage
	[304 349-10	m/o/c'(k)ʌ	to wash
	[302 359-11	moɬʌ	to rub small
302		moɬʌ	to break / smash to pieces
	348-9	m/o/n/g/ʌ {see m/o/nʌ}	much
	[280 348-9	m/o/nʌ	"
303		mu	dem. pron.: this / that
304		mucʔʌ	to wash
	[305 350-12	mu/č/ʌ	(bodily) deficiency
305		mučʌ	spoilage, shortage
306		muda	to end
358		munE (?)	defect, vice, deformity
	[308 369-13	mu(n)kʔʌ	labor
308		mu(n)kʔʌ	heavy, difficult
307		muña (?)	egg, testicle
	[307 373-9	muñ(d)ʌ	" , "
309		muri	to twist
310		murʌ	to break, to crush
	[310 359-10	murʌ	to rub small
	345-10	murʌ	to scream
	[306 344-12	mutʌ	to end
311		mUdʌ	to think (about)
312	372-2	mʌtʔʌ (?)	worm
	[298 334-4	mʌwʌ	water
313		mʌ/ž/ʌ	bright / light, sun
314		-n	suffix of the oblique forms of nouns and pronouns
		na	locative particle
	339-4	nahrʌ	day
	[331 349-8	najrʌ	man
315		nat/o/	female relative by marriage

N.Dict.	I-S('67)	Word	Meaning
[315	361-6	natΛ	kinswoman
	357-2	n/āk'/Λ	to chase (enemies)
[316	354-6	neqrΛ	forehead
316		ne/rH/i	forehead, brow
317		nimi	name
[317	343-8	nimΛ	"
[335	368-13	nu	now
	357-9	nurΛ	to penetrate
	355-12	[nwh- RR	dead person
[334	335-3	/n/ΛgΛ	to stab
318		ńaŋrΛ	young, newborn
319		ńamΛ	to squeeze, to sieze
	373-7	ńan/g/Λ (?)	tongue / language
320		ńara	fire, flame
[323	333-12	ńăč'Λ	moist
321	350-2	ńămΛ	soft
[322	334-11	ńăwă	hair
322		ńă/wH/a (?)	"
323		ńăžΛ (?)	moist
324		<ń>ida	to bind
[326	369-3	ńi(h)rΛ	to flow
325		ńila	slippery and moist (of the inner layer of rind/skin)
[325	365-12	ńila	mucus
[318	349-1	ń/o/ŋrΛ	young
326		ńohrΛ	moist, to flow
(cf.325)	365-11	ńo/H/lΛ	mucus
[319	339-7	ńomΛ	to hold
[326	333-13	ńorΛ	moist
327		ńowda	to move quickly
[327	338-13	ńowdΛ	to move
[328	369-9	ńukΛ	to pull
[329	347-3	ńulΛ	to shed
[320	337-14	ńurΛ	to burn



N.Dict.	I-S('67)	Word	Meaning
328		śūkΛ	to shake (v.t.), to pull at
329		śūlΛ-	to pull out, to strip off
[324	364-6	[śyḡa- U	to bind
359		ñajgu-	to bow / bend, to curve, to droop / hang
	336-5	ñejΛ	nit
[359	350-7	ñigΛ (?)	to be inclined
[330	355-10	ñik'a	cervical vertebra, neck
330		ñik'a	" , "
331		NajRΛ	man, male
332		NR	dem. pron.: this / that
333		-NR	suffix of pl. animate n.'s
334		NEgΛ	to stab
360		Nuq/ū/	to bend, to curve, to rock, to lower / drop
335		NūqΛ	now
	353-8	[pač(Λ) R	to open
	347-11	pa/k'/Λ	to burst
361	368-4	pa'iqΛ	foot / sole
336		paiΛ (?)	swamp
362		p/a/r/ä/	nail (of finger or toe)
	358-9	[pāry R	bee
	356-7	päʔΛ	mid (half)
363		/p/äsΛ	root
[375	365-3	p/ek'/Λ (?)	cattle
337		peIHi	to tremble, to be afraid
[337	331-15	peIΛ	to be afraid
364		per/e/	rind / skin / peel
	342-3	[per/s/Λ U	back
[364	344-8	/p/erΛ	skin
[9	335-9	[p/i/rΛ- U {berg/i/}	high
	344-7	[p/i/šk/ä/ U	glue
[340	332-10	[piśΛ- R,U	to splash
	338-1	piśΛ	to prepare (food)

N.Dict.	I-S('67)	Word	Meaning
	339-8	/p/itΛ	to hold
[362	351-7	[pnd' AA	nail (of finger or toe)
[339	360-7	[prs' AA	to tear
	360-1	[pś- AA	to widen (?)
[336	331-10	p/u/1Λ	swamp
[366	335-2	[puna U	hair (?)
365		/p/unčE	body hair
	349-6	[pu(n)δΛ U	scrotum
366 (cf.365)		/p/u/ñ/a	hair, wool, feathers
338		purčΛ(gΛ) (?)	flea
[338	331-2	purgΛ	"
338		pülčΛ(9Λ)(?) {see purčΛ(gΛ)}	flea
342		P/š/Hja (?)	pain
367		p'adΛ	to fall
	364-12	p'aj/n/Λ	to squeeze
368		p'algΛ	fortified settlement
[368	356-12	p'al/g/Λ	settlement
369		p'alihma	palm (of hands)
	348-8	p'alΛ	much / many
370	343-4	/p'/alΛ	tooth
	337-11	p'áíΛ	to burn
	344-4	p'anΛ	to put
	359-4	p'a/rj/Λ	to spread
	346-9	p'arΛ	to fly
371		/p'/a/se	membrum virile
[371	372-9	p'a'/ś/Λ	penis
	366-13	p'atΛ	(earthenware) vessel
	368-3	p'atΛ	foot
	372-15	p'at'Λ	wide
372		p'/š/j1Λ	to fall
	337-16	p'š/k'/Λ	hot
339		p'š'á/a/	to tear, to break, to split

N.Dict.	I-S('67)	Word	Meaning
	357-11	p'edΛ	to pierce (repeatedly)
[342	331-6	p'e/H/jΛ	to be ill
373		/p'/eHra	to shepherd / graze, to defend, to take care of
	366-7	p'enΛ	dog
	345-6	p'erΛ	edge
	361-7	p'erΛ	to give birth to
	352-5	p'iywΛ	fire
[373	354-2	p'i/H/ra	to graze (v.t.)
	352-16	p'i/H/Λ	point
	372-16	p'ilΛ	wide
	360-3	p'íΛ	to split
374		p'irk'Λ	to ask, to request
[374	357-10	p'ir(k')Λ	to ask
340		p'isΛ	to splash
341		p'odqa {see p'ozqa}	hip
	360-9	p'ojΛ	child
375		p'ok'we	cattle (or livestock)
	358-3	p'o/k'/Λ	bubble
341		p'ožqa	hip
	362-3	[p'u- K	to chop
[365	358-8	p'učΛ	hair, down (fine, thin)
	353-14	p'uč/Λ	to fall
	339-13	p'uyΛ	to blow
	343-15	p'u(H)jΛ	to boil
	369-8	p'uΛ	poplar (tree)
	354-14	p'u/nj/Λ	to weave (to plat)
	359-12	p'ur(j)Λ	to rub small
	339-14	p'usΛ	to blow
	340-4	p'u/t'/Λ	hole
[339	330-7	[p'ΛrΛ	to beat
	351-4	qalΛ	under / below
376		qamΛ (?)	to seize

N.Dict.	I-S('67)	Word	Meaning
	354-5	qant'Λ	fore
	371-2	qapΛ	to seize
	343-6	q/a/t'Λ	to go
	342-10	qawΛ	to defend
	362-5	qe1Λ	hand / arm
	338-12	q/o/dΛ	to move
343		qot'i	to ignite, fire
377		qowe	opening
[377	353-6	qowΛ	"
	357-12	qurΛ	to pierce (repeatedly)
	354-3	q'arΛ	to smell (v.i.)
	350-8	q'im/H/Λ	to strain oneself
	371-9	q'i/ħ/Λ	cold
	366-1	q'/iw/1Λ	to hear
	370-5	q'o(H)1Λ	to kill
	373-8	q'o1Λ	testicle
	344-14	/q'/opΛ	crust / bark / rind
	345-11	q'u1Λ	to scream
378		q'urE	to love
[378	347-13	q'urΛ	"
344		q'urΛ	point, to cut
345		q'Λ (?)	part. with collective meaning
	372-10	q'Λ1Λ	penis
	368-2	ra/k'/Λ	to build
	359-9	[rd- AA	to grow
346		rEΛ (?)	daylight
	349-12	[rhg AA	to wash
	362-10	rowΛ	to dig
	358-15	ru/ć/Λ	to destroy
	330-3	r/u/č'Λ	to run
	339-2	rΛgΛ	to move
	334-8	rΛ(h)bΛ	emotion
	361-3	rΛkΛ	horn

N.Dict.	I-S('67) Word	Meaning
	373-2 rΛwḥΛ	wide
	356-8 sagΛ	to receive
	366-10 [sakΛ- A	sap
	339-11 sanΛ	to think (about)
	336-7 sājΛ	pus
	348-1 /sǎ/mΛ	to grease
[44	339-1 [sel- IE {é'elΛ}	to move
	337-5 [sen- IE	year
	366-12 [sibΛ- A	sun
	365-2 silΛ	slippery
	349-5 /s/ipΛ	to drizzle
	341-9 /s/irΛ	sinew
	345-14 [sisx-]₀- K	blood
	365-9 [sokΛ- A	blind
	341-10 son/H/Λ	sinew
	357-8 sonkΛ	to penetrate
	333-10 sulΛ	moist
	351-1 /s/u1Λ	unfastened
	367-2 /s/undΛ	to dry
[51?	342-6 sun(g)Λ	odor
	348-7 sup'Λ	to sweep
	337-1 [sūra- A	to talk
	341-7 sΛwΛ	fluidity
347	SΛ1Λ	favorable
	368-6 śa/č/Λ	to strew
	336-4 /ś/ajrΛ	nit
	343-5 śalΛ	willow
	342-4 śarnΛ	invocation
	350-13 śel(k)Λ	unfastened
	335-13 śem/H/Λ	to swallow
	364-3 śidΛ	to bind
	364-4 śi/H/Λ	"
	348-2 śiwΛ	to smear (with clay)

N.Dict.	I-S('67) Word	Meaning
	342-13    śojΛ	to sound (loud)
	353-7    śo/λH/Λ	to be separated (from herds)
	357-6    /ś/otΛ	to curse
	336-12    [/ś/ujΛ- U	to bend
	365-10    śulΛ	mucus
	370-8    śuλΛ	coals
	370-2    [ś/u/ηkΛ- U	heavy
	344-2    śΛlΛ	gut
	366-2    śΛmΛ	to hear
	369-1    šarΛ	to flow
348	šehr'a	to be awake
[348	331-4    šerΛ	"
	361-10    š/e/wΛ	to give birth to
	366-5    šingΛ	snow
	366-15    širwΛ	to dry
	369-11    [šm- AA	grass
	355-2    [šmk' AA	shoulder
	367-5    [šp(w)	to sleep
	350-10    š/u/dΛ	violence
	369-7    šupΛ	thin
	367-1    šu/ś/Λ	to dry
	371-10    šuwΛ	good
	358-6    šΛwΛ	to allow
	364-11    [šũđam U	heart
	354-10    šΛrpΛ	to drink
	361-5    ta/H/jΛ (?)	kinsman
	355-7    ta/k'/Λ	suitable
	369-14    talΛ	to shake
	369-12    tākΛ	to touch
	356-5    tängΛ	full
	355-1    [tālū A	shoulder
	335-14    [tār- D	to swallow

N.Dict.	I-S('67)	Word	Meaning	
		365-1	te/h/Λ	to speak
		339-9	te1(h)Λ	long
		360-5	te/í/Λ	to split
		360-6	ter(H)Λ	to tear
		370-10	tikΛ	terror
[69]		342-15	[tiqa K {diqΛ}	soil
		338-11	to	two
		338-8	to/H/Λ	to give
		350-6	tojΛ	to incline, tilt (v.t.)
		354-15	[toky- A	to weave
[62]		334-9	t/o/lqΛ	to be in agitation
		335-10	[/t'omp(Λ) A	bulging
		347-10	[t'ök(Λ)- A	to pour
		357-13	turΛ	to pierce (repeatedly)
		356-6	/t/urΛ	full
		357-5	[túí- A	to come
		347-9	tΛ/h/Λ	to pour
		352-2	tΛlΛ (?)	to cheat
		367-8	tApΛ	to cut off (plants)
		343-11	t'aj/lΛ	stone
		351-3	t'al(H)Λ	to carry
		355-4	t'al/H/Λ	flat
		370-4	t'angΛ	to pull
		370-3	t'anΛ	"
		343-1	t'anΛ	to know
		352-4	t'anΛ	to chop off
349		t'aph<a>	to beat	
		353-10	t'ap'Λ	to feel
		356-10	t'ap'Λ	to strike (a target)
[349]		330-6	t'ap'Λ	to beat
		368-14	t'arΛ	to rub
		347-12	t'arΛ	bald
		335-4	t'äjΛ	louse
		359-6	t'älΛ	to grow

N.Dict.	I-S('67) Word	Meaning
344-5	t'äpΛ	to put
338-2	t'/ä/pΛ	to (be) warm
333-14	t'ärΛ	to contain / accomodate
353-11	t'/e/mΛ	to feel
370-11	t'ijΛ	narrow
333-7	t'ííΛ	to swell
364-15	t'inΛ	strong
337-12	t'/o/gΛ	to burn
336-2	t'ubΛ	deep
372-11	t'u/ly/Λ	jackal
368-11	t'umΛ	dark
344-11	t'ungΛ	base of tree, stump
338-10	t'unk'Λ	to press
354-12	t'upΛ	to spit
332-13	t'urΛ	rapid
333-3	t'urΛ	to turn
361-12	t'urΛ	to give birth to
343-7	t'urΛ	roe
367-6	t'u/w/Λ	calm
341-4	t'ülΛ	to burn fuel
355-8	t'AbΛ	suitable
369-5	t'Alk'Λ	to shove (v.t.)
370-9	t'ArpΛ	satisfaction
341-5	wa/é/Λ	abdomen
330-9	wa/h/Λ	to beat
353-15	wajΛ	to fall
361-11	waldΛ	to give birth to
363-3	w/a/í(k')Λ	bright / light
336-9	wankΛ	to bend
367-13	warΛ	side
341-2	warΛ	to burn (up)
336-13	watΛ	to talk
364-14	wäkΛ	strong



N.Dict.	I-S('67) Word	Meaning
	337-9 wärΛ	mountain
	339-3 wärΛ	to do
	370-13 [wä/s/Λ- U	to get tired (of)
	362-1 wedΛ	to chop (with weapons)
	351-2 wegΛ	to carry
	367-7 welΛ	to slay / fight (v.t.)
	333-4 wetΛ	to lead
	334-2 wetΛ	water
	337-4 w/e/t'Λ	year
	362-12 wi/H/rΛ	male
	333-11 wiʔΛ	moist
	340-11 wiλ/g/Λ	to desire
	335-5 wīrdΛ	to rear (v.t.) rear (v.t.)
	359-7 wi/š/Λ	to grow
	332-14 woylΛ	to be
	364-13 woj/H/Λ	strength
	358-2 woj/k'/Λ (?)	straight
	355-5 wojΛ	to swim / sail
350	wol<a>	big
	353-3 wo/1H/Λ	point
[350	331-11 wolΛ	big
	335-1 w/o/mdΛ	hairs (facial)
	353-5 won/k/Λ	opening
	337-8 wo/rH/Λ	mountain
351	wot'a	to get, to overtake
[351	332-3 wot'Λ	to take
	332-9 [wyćkΛ- U	to throw
	368-8 zalΛ	secret (adj.)
	365-13 za/1/Λ	mucus
352	332-4 zap'a	to take into one's hands, to hold
	340-6 zegΛ	to eat
	346-4 z/e/wΛ	left
	356-4 zilΛ	to creep

N.Dict.	I-S('67)	Word	Meaning
	333-9	zirΛ	to see
[347	330-10	zolHA {SΛ1Λ}	to favor
	370-12	zukΛ	harvest
353		ž/a/ñΛ	fetus/fruit, pregnancy, descendants
	373-3	žip'Λ	to pinch
	371-5	žΛyΛ (?)	to seize
	342-12	žΛhΛ (?)	to call
	364-16	žΛ1Λ	strong
	359-5	[žada- R	to spread
	350-9	žonč'Λ	insect
	359-3	žΛrΛ	to spread

#### INITIAL VOWELS (NOT IN *NOSTRATIC DICTIONARY*)

[137	372-4	[āí R {ʔaíΛ}	over / across
[104	354-7	[alka- U {HalΛ}	fore
[126	344-10	/a/rbΛ {ʔarba}	to practice witchcraft
	359-1	[a/rd/- K	early (?)
[127	352-7	[asa- R {ʔaSa}	fire
[131	341-13	e1Λ {ʔe1R}	to live
[133	371-4	[em- IE {ʔEmΛ}	to seize
[106	352-9	[eŋkΛ U	fire
[116	355-6	[er- IE {Horä}	to raise (rise)
[107	359-2	erΛ {Herä}	to fall to pieces
[108	362-14	erΛ {Herä}	male
[132	333-1	eśΛ {ʔesR}	to be
[136	340-7	[idä- R {ʔitä}	to eat
[112	368-9	/i/rΛ {Hirá}	to drag
	359-8	[itä- U	to grow
[102	367-11	[ō- R {Ha}	to come

N.Dict.	I-S('67)	Word	Meaning
[120?	367-3	[oða- U	to sleep
[117	373-10	[okśa U {HosΛ}	ash-tree
[113	353-4	[oky A	point
[124	370-14	[oma U {ʔamu}	morning
[114	350-3	om/cʔ/Λ {Homsa}	meat
[105	371-12	ongΛ {Hanga}	jaw
[138	354-1	[ube- K {ʔ/e/bU}	bosom
	362-6	[u/ń/a A	tame
	337-13	urΛ	to burn
[119	334-6	[uwa U {Huwa}	water

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